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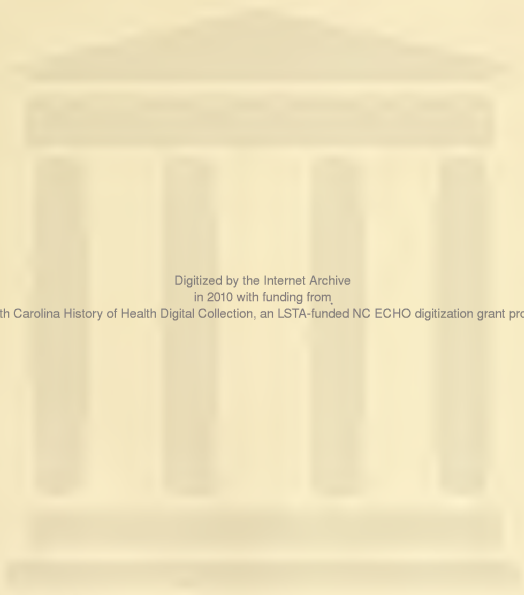


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H. A. Howe, M.D.

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The Charlotte Medical Journal.

VOL. XXV.

CHARLOTTE, N. C., JULY, 1904.

No. 1

Medical Society of North Carolina—President's Address.

By H. B. Weaver, M. D., Asheville, N. C.

Fellow Members of the Medical Society of the State of North Carolina:

I appreciate with much gratitude your kind partiality in electing me to the office of president, and especially am I the more grateful when I consider with what unanimity this honor was conferred upon me. I only ask now your indulgence and patience while I endeavor to perform the duties of this office.

The recurrence of anniversaries, or of longer periods of time, naturally refreshes the recollection and deepens the impression with which they are historically connected. Once more, for the tenth time, we have met in this grand old historic city to celebrate, in fact, our semi-centennial of existence, there having occurred twelve annual meetings up to the beginning of our Civil War, and this makes the 38th anniversary since that period.

We should congratulate ourselves in having the pleasure of meeting in a community like Raleigh, which has always had the enviable reputation of being the most generous host, producing the most gallant knights and certainly possessing the most beautiful women. It is a city noted for its conservatism, for its patriotism, and for its erudition. Here we find that spirit of the old South, if you please, still pervading her citizenship in all its pristine purity. A spirit whose highest aim is the conservation of those ideal virtues of simple honesty, learning and gentility, the most precious boons, which are the bulwarks of the manhood and womanhood of this Southland. These characteristics are in sharp contrast with that strenuous life of commercialism which characterizes some other sections of the country, whose citizens allow that morbid sentimentality of money-getting to dominate their thoughts and actions, and to subserve ulterior purposes. Your city is no less distinguished for its patriotism; for it has among its citizens representatives of those who were "first in war, first in peace," and are now "in the hearts of their countrymen." With a peculiar veneration do we recall the names of a Wyatt, of a Bagley and a Shipp, who were first to lay upon the altar of their country their young lives as a sacrifice in defense of those principles which are dear to every American freeman. But we would be unjust to history if we failed to mention the names of Ruffin, of Pearson, of Badger, of Ashe, of Merrimon, and of Vance, whose lives and actions are a part of the woof and web of the body politic of this Capital City. Their lives stand out in bold relief upon the horizon in the State's history. It was they who correctly interpreted those grand ideas of human liberty and who waded through seas

of crimson gore to establish and perpetuate those institutions.

These are bright models for our youths to hold up to themselves and study to be what they behold.

In looking back through the last half of the nineteenth century, our minds rest on a period in which was the birth of the most profound system of medical organization with which the world has since become familiar. We praise and venerate the names and work of the Hills, a Strudwick, a Williamson, a Dickson, a Johnson, a Thomas, and the Haywoods and their co-adjutors, who in their wisdom in 1849 organized the Medical Society of the State of North Carolina. To them we owe much for this rich heritage. Though crude and undigested in detail, the ideas which were evolved from the minds of those illustrious men are essentially the fundamental principles upon which rest today the whole plan of our re-organization. They, first of all, in the United States, suggested the idea of the County Society as the unit of organization. They, first of all, conceived the idea of scientific qualification for the practice of medicine, and they, first of all, organized the first "Board of Medical Examiners" in America. Upon this tripod is based the whole system of medical organization, from the smallest County Society up to the American Medical Association. To each of them, the pioneers and the veterans, in medical progress in our beloved State, we should give the meed of praise and endeavor to emulate them as our worthy exemplars in our new and glorious work of re-organization.

Twenty years ago today we were assembled in this capitol, where a most serious problem confronted us. The standard of medical education was then at a low ebb. Charlatanism and quackery were rampant in the State. Any person whomsoever might practice medicine, without any previous scientific or practical qualification whatever. There was then no law for the punishment of incompetent practitioners, the only legal bar to practice being the inability to sue for and collect a bill without first having a license from the Board of Medical Examiners. At this juncture old Rip Van Winkle waked up, and we found ourselves standing face to face with this mighty problem, helpless as yet, but not hopeless. The profession of the State had become aroused and alarmed at the state of affairs then existing.

It was at this meeting, in 1884, that your humble speaker had the temerity to introduce the original resolution promulgating the idea of making it a criminal offense, and punishable as other misdemeanors, to practice medicine and surgery without a license from the State Board, and also to constitute a committee whose duty should be to pray our next Legislature for an amendment incorporating

into the statutes of the State the misdemeanor clause. After a spirited debate, the resolution was passed, the committee was appointed, the law was enacted, and has been amended from time to time, until now it stands almost perfect, without a rival in the United States. For the perfection of this law we can not fail to mention, with just pride, the names of Dr. Thomas F. Wood and Dr. Richard H. Lewis, and thank them for their valuable services as benefactors, in their long and arduous work, which they rendered to the whole State.

What has been the result of this legislation? This feature of the medical law soon became so popular that every State in the Union, with one or two exceptions, has adopted this idea and has incorporated the misdemeanor clause into the statutes of the respective States. In consequence the standard of requirements for license has been raised, which in turn has had the effect to heighten the standard of medical education throughout the whole land, and instead of two courses of lectures of three months each, as of old, we now have in most schools four years' courses with six months in each year; nor is this all; quackery is almost annihilated, incompetency has decreased an hundred fold; the profession at large are more deeply rooted in the fundamental principles of the science and art of medicine; the public health has thrown around it a better safeguard and the Commonwealth in general are the happy recipients. Notwithstanding the temporary check which the cause of medical progress has sustained from the adverse opinion of our chief justice, in his effort to define the practice of medicine, yet the original law still stands, in full force, unseathed, immovable, and as immutable as the rocks of Gibraltar!

It may be at this time there is no law nor reason for belief that the practice of osteopathy is no more, in part, the practice of medicine than "two and two make five," and that "all the law can do is to regulate and safeguard the use of powerful and dangerous remedies like the knife and drugs," but cannot safeguard an ignorant and dangerous animal, yet the time must and will soon come when every person, of whatever creed of pathy, shall be, in the language of Lord Coke, "groundly learned and deeply studied in the different branches of the science of medicine, before he shall be intrusted in any manner with the health and lives of the inhabitants of North Carolina.

We frequently see in the public prints of the day complaints of judicial legislation. It is said that this is a growing and great evil, and I am justified in expressing the opinion that the Supreme Court, in Biggs' case, undertook, not so much the exercise of an unquestioned judicial function by declaring the law in respect of the Act of 1903, but the legislative power to repeal it. I know many lawyers of ability in the State who believe the decision in Biggs was erroneous. In conversation upon this subject with one of these

lawyers, whose ability as a jurist is unquestioned, he said: "In *State vs. Call*, 121 N. C., pages 643, 646, the Supreme Court has said: "It is not to be questioned that the law-making power of this State has the right to require an examination and certificate as to the competency of persons desirous to practice law or medicine, * * * or dentistry, * * * to teach, to be druggists, pilots, engineers, or exercise other callings, whether skilled trades or professions, affecting the public, and which require skill and proficiency." The court had before it the question of the constitutionality of Sections 3,122 and 3,132 of The Code, as amended by Chapter 117, Laws of 1885, and other laws. By the Act of 1885 it is provided that 'Any person who should begin the practice of medicine or surgery, for fee or reward, without first having obtained a license from said Board of Examiners shall be guilty of a misdemeanor,' etc. This law was held to be valid and constitutional. In 1903 the Legislature passed another Act, enlarging the class required to obtain a license. It seems to me there can be no doubt that Biggs belonged to the class required to obtain a license from the Board of Medical Examiners, and as he had no license, he was guilty of a violation of the law.

"The chief purpose of the Act of 1903 was not to give to the phrase 'practice of medicine and surgery' a broader signification than it had before the Act, but to require persons pursuing certain 'callings' to stand the prescribed examination and not undertake to practice their 'callings' requiring skill until they obtained a license from the Examining Board. What difference can it make what other words might have been used to make the intention of the Legislature plain so long as those which they did use made it plain? No one will deny that Biggs was exercising a 'calling' which required skill, a 'calling' in which a knowledge of anatomy, physiology and hygiene were indispensable to its successful prosecution. If this be true, then, unless the decision of the court in *State vs. Call* was wrong, the Legislature had the power to require all persons engaged in the 'calling' or profession in which Biggs was engaged to obtain a license from the Board of Examiners.

"The Act of 1903 required that all persons engaged 'in the management, for fee or reward, of any case of disease, physical or mental, real or imaginary, with or without drugs, surgical or mechanical appliances, or by any other method whatsoever, to stand an examination and obtain a license from the Board of Examiners. Beyond all question, this language is broad enough to include Biggs, who was in the 'calling' of administering 'massage, baths and physical culture, manipulations of the muscles, bones, spine and solar plexus, etc., and advising his patients what to eat and what not to eat.' This unquestionably required skill and learning which I have already alluded to. I am unable to see

that the Act of 1903 is less effective because it provides that the expression 'practice of medicine and surgery' shall be construed to mean 'the management for fee or reward of any cases of disease,' etc. I believe the Legislature had the power to make such a provision, and that it is valid, but whether it be valid or not, there is enough in the Act to show a clear purpose of the Legislature to require an examination and a license. All that is said in the opinion in *State vs. Biggs* about fee or reward applies as well to the Act of 1885 as to the Act of 1903. Any kind of a doctor can practice his profession without a license if he charges no 'fee or reward.'

"Whether the particular case of *State vs. Biggs* was properly decided or not, I do not undertake to say, but I have no hesitation in saying that, in my opinion, the Act of 1903 embraced the calling or business which *Biggs* was practicing, and that the Act is valid unless the case of *State vs. Call* was wrongly decided."

In this view of the case, I am persuaded that the great medical profession of this State can well learn "to labor and to wait," holding fast to those principles of "equal rights to all and special privileges to none," resenting in disdain the idea that the amendment was "evidently drafted by promoters of the monopoly," and was not conceived and drawn "solely in the interest of the public."

The New Plan.—We have passed one year under the plan of re-organization. How well the officers of this Society have succeeded you must be the judges. Your efficient and zealous counsellors have organized and equipped sixty-two County Societies, with a membership of 1,000 active legal members. We have reported 72 counties out of 96, with 1,000 members whose dues are paid, and which have bona fide representation in the House of Delegates.

The plan of re-organization is perfect in conception and practical in its scope and purposes. The County Society, which is the unit of organization, is the bed rock of the whole superstructure; while another main feature of the new scheme is the division of the work into two grand departments—the scientific and the legislative. It is through the County Society that the bond of union of the profession must be maintained. Nowhere in the whole profession is the era of good feeling and brotherhood more needed than in our local home societies. The proverbial stigma that attaches to the medical profession, in that doctors disagree and hate each other, is directly traceable to the rivalry and jealousy of the local doctors who are in each other's way, or between competing schools in the same city. Especially is this the case of a new doctor who comes into a community, who is met at the "threshold with ill-concealed sneers and sometimes complete ostracism of those established in practice, which grow if he succeeds, but rapidly disappear if he fails," and he is then the dearest brother in the world. Physicians are the most agree-

able fellows in the world except with their rivals at home, and as McCormack says: "They are often like Damon and Pythias with those from a distant city or community, while barely on speaking terms with equally as good physicians of their own town or neighborhood."

Now, why is this? It may be all summed up in one word—misunderstanding—hence, the great cure for this defect is the meeting together in the local societies, where, through discussion and intercourse, physicians may meet and know each other face to face, and in thus fraternizing, learn to respect and love each other more and more. And as we thus become better acquainted with our brother, we will find him not such a consummate quack as we supposed; not so unethical as we have heard; that he knows a little more about medicine than we at first imagined, and, in fact, he is not such a bad fellow after all; and thus the misunderstanding vanishes, the members fraternize, the membership increases, the discussions become more interesting, the attendance at each succeeding meeting is larger, the bonds of union are strengthened, and the profession at large is unified and benefited, all through the county organization. The benefits which will be derived from a division of the society into two co-ordinate branches, the scientific and legislative, will be so apparent at this meeting it is needless, it seems to me, to refer to the matter. The emphasizing and bringing into prominence the scientific part of the work at this meeting is quite significant, and is greatly due to the indefatigable energy and wisdom of our worthy secretary.

Our efficient Board of Health still continues an auxiliary of first importance in the progress of sanitation within the State; especially have they done valuable and efficient work in the investigation of the subject of water supplies of several cities, and have also greatly reduced the possibility of the spread of contagious diseases, notably smallpox, by a closer supervision and execution of the laws of prevention; yet there is one defect in the system of our health law. That is an imperfect method of gathering vital statistics. As the custom now is, we have mortality reports from the cities and larger towns only. This is to be deplored, for it is as important to have a correct history of the rural districts in regard to vital matters as the cities.

But the Board of Health can not move forward in this matter without means for the increased work which this perfected system would entail. Fifteen hundred dollars is entirely inadequate for the needs of the board; hence, they are handicapped at the very threshold. I would suggest, therefore, that the House of Delegates devise some plan by which they may assist the board in securing favorable legislation and increased appropriations from the Legislature in furtherance of that work, to the end that we may attain a complete and uniform system of registration of vital statistics. I, therefore, recommend

that the committee on public policy and legislation take this matter under advisement, with plenary powers to act in the premises; and also I recommend the appointment of a committee of three to co-operate with the committee on public health of the American Medical Association, which meets at Atlantic City, June 7th, 1904.

Now gentlemen, we come to the most important subject in the domain of medicine.

Tuberculosis.—There is no question which is attracting more attention from the public from a social and economic standpoint, nor a problem of more absorbing interest today to the physician, from a medical and humanitarian aspect, than the scientific and economic consideration of methods and means for the prevention and cure of tuberculosis or consumption. More has been said and written of this subject in the last two decades than all other medical subjects put together.

We read with horror of the devastations caused by epidemics of the plague, black death and cholera, historic epidemics which have swept over Europe and Asia, and wonder in amazement at the stupidity manifested by the authorities in epidemics of typhoid fever or smallpox. There is something appallingly impressive in a malady which is mysterious and unfamiliar, which spreads rapidly, with great mortality, and quickly subsides, "but to an epidemic that is always and everywhere with us, that is so common and so fatal that every one has personal knowledge of it, we present a stolidity as fatalistic as death itself."

Notwithstanding this plague, consumption, has hung like a pall upon the earth for thousands of years, and has killed, not millions, but billions of men and women, more than all wars and pestilences the world over, yet a people have never been aroused until lately to a mighty, sweeping action. Twenty years ago we stood facing this problem without hope, and helpless in staying the ravages of this dread scourge. This attitude was naturally the result of the idea of an unknown cause, insidious progress, and incurable nature of the disease, and the world contented itself with the philosophy of what "can't be cured must be endured."

But today new hope and life come to us. We now know the cause and nature of consumption. We know that there are two primary factors in the causation of every case of the disease—the seed and the soil—that there must be a vegetable, not animal, parasite or germ, the tubercle bacillus; that this germ originates only from tuberculous food and from the sputum of a consumptive patient, which is either ingested with the food or breathed into the throat and lungs with the air. That the disease, per se, is not inherited, but acquired. That a predisposition may be inherited or acquired. It has been demonstrated over and over again that tuberculosis is an infectious, preventable and curable disease. These are questions which are put entirely beyond the pale of contro-

versy. The tuberculous problem, therefore, must be viewed chiefly from its civic aspect.

Pruden, one of the greatest living pathologists, lately writing on the subject, says: "It is commonly neither wise nor necessary for people not professionally concerned to think much about disease or weigh anxiously the chance or mode of its acquirement. But now and then conditions arise that demand our attention and instruction, in order that a great threatened or actual calamity may be averted. Such a condition faces the people in all lands today in the appalling prevalence of tuberculosis."

Today we stand facing the vital statistics of the world, which tell us that two millions of people die annually from this frightful scourge; that this migration into eternity goes on at the rate of 8,000 for Canada and 150,000 for the United States yearly. Every day 3,000 and each minute of the day two persons fall from this enemy. Eminent men who have been engaged in pathological work for the last twenty years have come to the conclusion that 96 per cent. of the entire population of the civilized world, over the age of 18, is tainted with tuberculosis in either its latent or active form. That it is the cause of one-third of all deaths that occur between the ages of 15 and 45, the period of usefulness, or the productive period. These facts prove that tuberculosis is more a social problem than a purely medical one. As a social problem, it makes it a matter of grave concern to all members of society; its prevalence depends largely on social conditions; in turn it aggravates social evils, and its practical eradication depends upon social activity.

It is estimated on statistical experience that of the eighty millions of population in this country, ten millions of people are doomed to die of consumption, who might otherwise survive for many years. Every year we pay tribute to this disease in the form of sacrifice, a hundred thousand victims in the prime of life, together with untold treasure. The cost and slaughter of war are insignificant in comparison.

But let us come nearer home, and view what havoc this disease is playing in our Southland. Tennessee, Kentucky and West Virginia lead the van with the frightful mortality of nearly fifteen per cent., while North Carolina, with her sister States, South Carolina and Virginia, are registered second tier of States, with a mortality of nearly twelve and a half per cent. The percentage of deaths from consumption is greater in North Carolina than in the great States of Massachusetts, New York and Illinois, the average percentage for these States being ten and one-half, while North Carolina is twelve and one-half per cent. The most striking fact brought out by statistics is that a group of 340 of the largest cities in the union, with a population of 29,000,000, with a yearly death rate of 59,000 from consumption, giving a mortality of 10½, rank second in comparison with North Carolina, which is first,

with less than 2,000,000 souls, with a mortality of $12\frac{1}{2}$ per cent. from consumption, which sends into eternity yearly over 2,500 men and women. If we extend the comparison, the figures show the 12 largest cities, with a population of 8,000,000, representing nine different States, from Massachusetts to California, whose population amounts to 45 per cent. of the whole, have a less death rate than North Carolina, which has only 5 per cent. of urban population, in the former there is a mortality of $10\frac{3}{4}$ per cent., while in the latter it amounts to $12\frac{1}{2}$ per cent. This high death rate in our State shows certainly that consumption is more prevalent in the rural districts than one would suppose from casual observation. Out of 2,350 deaths, 1,850 occurred in the country districts. If, as has been shown, consumption is the cause of $12\frac{1}{2}$ per cent. of all deaths, 2,500 occurring yearly, in this State, and there is only 5 per cent. of urban population, there is no question but that there is frightful mortality from the disease in the rural districts and small towns composing 95 per cent. of population.

It may be argued that the two prime factors which enter into the question of increased death rate from tuberculosis—the large number of individuals who come into the State seeking health, and the great mortality among the colored race—go far to swell the mortality list. The granting of this argument does not eliminate the fact of disseminated tuberculosis with centers of infection in every part of the country.

In 1900 there were 2,350 deaths from consumption in North Carolina. Today we have not less than 10,000 cases and with 3,000 annual deaths. This speaks in volumes for our State, and places us in not a very enviable position as regards the prevalence of tuberculosis, and calls to our minds that there is no problem which confronts the sanitary authorities of the State at the present time equal in its importance and magnitude to that presented by tuberculosis; nor is there any other sanitary proposal which offers the promise of such vast returns in diminishing the rate of death and sickness as one which provides successful measures for the prevention of disease.

This, although not a problem, is of supreme importance. Tuberculous diseases are not more prevalent than formerly, but only in recent years have the medical profession and sanitary authorities discovered means of the prevention of this disease.

Twenty years have passed since the discovery of the cause of tuberculosis by Robert Koch, and only lately has the full significance of his great work become apparent, in the prevention of tuberculosis, and even now a large proportion of the profession and laity fail to grasp its vast influence on the present and future happiness and prosperity of the human race.

Koch demonstrated that it was an infectious communicable disease caused by a germ.

Therefore, it follows as a necessary conclusion from his demonstration, that it was absolutely a preventable disease. Therefore, in view of what has been said, what are the practical deductions to be made from all these facts in our combat against tuberculosis?

In the first place, statistics reveal the prevalence and mortality of the disease, which serve to show the size, situation and strength of the enemy.

They show that the appalling death rate of tuberculosis continues; that although it is lowered in a great many localities, yet it continues to affect one-half of the whole human race, causing the death of one-seventh of all who pass away in the United States, and kills one-third of those between the ages of 15 and 45, and in North Carolina it is responsible for 12 out of every 100 deaths of her citizens.

In the second place, a knowledge of the nature and life history of the tubercle bacillus, the cause of the disease, reveals the strategic points of attack. If we know the strong and the weak points of the enemy, we can then get a clue of the specific weapons to be used in subduing and exterminating him.

This warfare then must be waged on two lines of action—prevention and cure.

The first then, prevention, is the key to the whole situation, and includes a crusade of education. "The natural history of the germ teaches that it does not multiply outside the body; that it may be killed by the simplest methods, direct exposure to sunshine and light being the surest; on the other hand, it may retain its virulence for two years or more in a dark, damp apartment;" that in the pulmonary form, which is by far the most frequent, the germ must find lodgment and growth in the tissues of the lungs, must be expectorated, dried and pulverized and mixed with dust, before it becomes dangerous to others.

The weapons, therefore, indicated are indeed simple. "The control of the habit of indiscriminate expectoration; the disinfection of the apartments where consumptives have lived; the education of all members of society in a few simple facts which they should know about the cause and prevention of consumption; and the isolation of the tuberculous patients in hospitals and sanatoria where they can be cared for under the proper medical guidance in all stages of the disease.

But if our campaign of education could stop here the solution of the problem of prevention would be quite easy. The social aspect of the case arises. "The ignorance and indifference of the people to their responsibility can not be controlled." They must be taught that the strengthening and resistance of the defenses of the body are as important as the strategic attacks on the enemy. They must be taught that everything that makes men and women healthier and happier as germane to prevention of tuberculosis. "The

better housing of the working classes, the improvement of the sanitary conditions of churches, theaters and all public places; the enforcement of standard healthful conditions in all occupations," especially in cotton and other factories, the reduction of working hours; the raising of wages; the teaching of the art of housewifery to girls and the science of food preparation; all these and kindred efforts tend materially to lessen the death rate of tuberculosis."

The people must be taught that anything that lessens the bodily resistance predisposes to the disease; that the wear and tear of the system resulting from privation or intemperance are great factors in the causation of the disease. And here it must be stated that the excessive use of alcohol triples the predisposition to tuberculosis. I quote another great author, Knoff: "There is another point in regard to alcohol and tuberculosis I wish to emphasize, and that is: The idea that alcohol is a remedy for consumption. There has never been a greater mistake made. Alcohol has never cured nor never will cure tuberculosis. It will either prevent or retard recovery."

What should be taught also in regard to tuberculosis which would be of incalculable comfort to many, is that the disease is not inherited. "It is very important that all should understand this, for it contradicts a long prevalent tradition. But what we do inherit is the susceptibility to the disease. It is not the disease, tuberculosis, then, which comes into the world with certain individuals or families, but the aptitude to contract it, should external conditions favor. However much a child of tuberculous parents may be predisposed to the disease, he can not acquire the disease unless by some mischance the fatal germ enters his body from without. Then the combination of conditions, the soil and the seed, produce the disease."

This then brings us to a fact of far-reaching consequences, that it is not a contagious disease in the sense as scarlet fever or small-pox are contagious, and shows that neither the person nor the breath of a consumptive is a source of danger, but the dried uncared-for sputum of those suffering from pulmonary tuberculosis is the great source of danger, and if only that discharged material could be rendered harmless or destroyed before it dries, the ravages of this scourge would cease in a short while, and in 30 years would be blotted from the face of the earth.

The main reasons why tuberculosis—such a preventable disease—remains still the scourge of the human race, after 20 years of saving knowledge, are three-fold: First, as we have said, the people do not understand the ways in which the disease spreads, and are ignorant of the simple means of its avoidance; second; many are careless or indifferent as regards sanitary regulations, and third, the facilities for the care of the poor and friendless are entirely inadequate. Thus a large per cent of the victims of the disease are hopeless,

in the sight of hope, which science holds out to them, and thus each sufferer left to infect his fellow-men.

It is admitted on every hand, without controversy, that tuberculosis is eminently a disease of the poor; that one-third of the working population between their fifteenth and forty-fifth year die of it. They are taken away in the productive period, and leave those dependent upon them for a living helpless. The idea of the importance of co-ordinating all the social forces is finding recognition everywhere. A great Frenchman says: "The struggle with tuberculosis demands the mobilization of all the social forces, public and private, official and voluntary." From all that has been said, we conclude that tuberculosis is a preventable disease; that it is not directly inherited; that it is acquired by the transmission of the germ from the sick to the well through the dried sputum, which, being pulverized, floats as dust in the air.

Now, what is the remedy in this great crusade? It is needless for me to say that the medical profession is fully aware of its duties and responsibilities in this struggle against tuberculosis. But the medical profession, however strong and influential, and the Board of Health, however enthusiastic and efficient, are entirely unable to grapple with this problem unless they have the support of the people and the administration of the State. They must have generous appropriations from the State for carrying on this work, for medical inspectors, and disinfectors, for educational measures, for the establishing of hospitals and sanatoria for the treatment of early stage cases, and comfortable homes for the advanced cases, where they can be cared for until the inevitable termination comes.

It is high time, then, that the whole State, medical and lay citizens, should wake up to the realization of our true condition in regard to this problem. Every member of this Society should constitute himself as a committee of one when he returns home to disseminate knowledge and educate the people of his community how to prevent tuberculosis. The State in her official capacity should view this question both from a humanitarian and economic standpoint. It is now 15 years since the Health Department of New York City began its efforts in the prevention of tuberculosis, and these have been rewarded by a reduction of mortality (40 per cent.) which is entirely out of proportion of the expenditure of money and time which has been done in the city of New York. More has been done in that than in any other city in the world, yet today she has 15,000 consumptive poor, with hospital accommodations for hardly one thousand. Recent statistics of the Health Department showed that 1,750 consumptives who were finally received in hospitals and have died were homeless. "They had slept in the alleys, hallways or anywhere they could find shelter for the night; 37 of them were found dead in such places." "What do

these homeless cases mean when viewed as sources of infection?"

"This must give food for thought to statesmen, sanitorians and philanthropists alike."

In considering this question from the view point of economy, our Legislature should be induced to consider the advisability of establishing hospitals and camps for the cure and treatment of the consumptive poor of the State. The State is spending many thousands of dollars yearly for the care of the insane, which is commendable and necessary for humanitarian reasons, but I have no hesitation in saying that greater returns would be attained by the expenditure of one-quarter of the amount in the prevention and cure of tuberculous diseases.

Herman M. Biggs, superintendent of health of the city of New York, in estimating the economic loss to the municipality from the effects of this disease, says: "It may be conservatively estimated that each human life at the average age at which the tubercular death occurs, is worth to the municipality \$1,500. This gives a total value to lives lost annually of \$15,000,000. Adding to this the loss of their service, at \$1 per day, food, nursing and medicines, gives a further loss to the municipality of \$8,000,000, making a total loss to the city from tubercular diseases at least \$23,000,000. It has been estimated that in the United States annually not less than 150,000 deaths are caused by tuberculosis. And estimating the value of these on the basis just given, we have an annual loss to the country of more than \$330,000,000. The census of 1900 gives, for North Carolina, 2,350 deaths from consumption. Estimating on the basis as above, it would give a clear commercial loss to our State annually of \$4,500,000. This economic view of the case would seem to be an unfeeling way in which to present the question, but it is the only way by which we can gain the attention of the law-makers and philanthropists.

The more consumption we cure the more bread-winners we create, and the fewer people will become charges to the communities.

The idea of sanatorium treatment of tuberculosis is becoming more popular every day, the world over. Foreign nations are manifesting great interest in this subject. Germany alone has 33 popular institutions established by the State. Insurance companies invested last year over two million dollars for sanitoriums for consumptives. England following the example of her greatest queen and noble king, has long been far ahead of this country in possessing several institutions for the treatment of consumption, and the reduction in the death rate from consumption in the last two decades, over one-half, is directly traceable to the doctrines of the sanatorium treatment.

To be convinced that consumption is a curable disease, one has only to consult the statistics furnished by the large sanitoriums. From any of those institutions which receive patients only in the very early stages of the

disease 75 per cent. are discharged cured. And in most of the sanitoriums in Europe, where people in all stages are taken, statistics show that 25 per cent. are absolutely cured and 50 per cent. are greatly benefited and sent home capable of making a living. If people would only remember these statistics they would never question any more the curability of consumption.

Several of the States already have taken advanced steps on the subject and have passed laws appropriating money for the erection of suitable sanatoria for the cure and treatment of tuberculous people.

Our sister State of Virginia, through the energy of the medical profession and concentrated action of the Board of Health of that State, have become alarmed at the serious tuberculous problem which confronts them. The Board of Health compiled and submitted recent statistics which showed there were 12,000 cases of pulmonary consumption in that State. The Legislature promptly passed a resolution inquiring into the "status of the disease commonly known as consumption, and also to report whether or not it is advisable for the State to establish hospitals for the cure and treatment of persons affected with tuberculosis."

Now, what of our own beloved State? Can we as individuals and collectively afford to be laggards in this great crusade?

In case of emergencies and in the dark hours of trials and tribulation have the sons of the old North State ever proved recreant to their duties? Did we not once sacrifice more precious lives and treasure than any State in the South for a cause we thought was right, and will we not again when we are called upon in the supreme hours of need, come forth with our brawn and treasure in this combat against our greatest enemy, consumption?

From the latest data at my command, I estimate there were in 1902 about 9,600 tubercular people in North Carolina. According to the mortality rates, it would give 3,000 annual deaths from tuberculosis. Are not these figures alone sufficient to convince us of the necessity of the mobilization of all our social and political forces in the education of public opinion up to the point of demanding legislation on the subject? And when we have done this, the ways and means will be forthcoming for the establishment of hospitals and camps in suitable portions of the State for the care of the indigent sick consumptive.

I therefore present this idea for the consideration of the Committee on Public Policy and Legislation, and ask them to discuss the proposition of the advisability of presenting, through the House of Delegates, a prayer to the next Legislature of North Carolina for the Governor to appoint a committee of five members to be composed of two laymen, two medical and one from the Board of Health, whose duty shall be to report plans, specifications and cost of one or more hospitals or camps to be erected in the most desirable and

healthy climate of the State, for the cure and treatment of people affected with tubercular diseases. The cost of this enterprise is not beyond the ability of the State to pay, when we consider it from an economic and humane standpoint. Basing our calculations on the expenditure of sanatoria institutions in other States, there could be built and equipped hospitals for the accommodation of 500 patients for \$200,000, and for the expense of running the establishment not over \$100,000 per annum. These figures dwindle into insignificance when compared to the loss of millions sustained by the State as a direct result from the ravages of this disease. A great deal can be accomplished for this great movement through the organized efforts of the individual county societies. Sixty-two societies with 1,000 active members can accomplish much in the way of moulding public regard for the prevalence and prevention of tuberculosis. Indeed, the united energies of these societies would be sufficient to control the actions of their respective county representatives in the Legislature, so that any reasonable measure that the medical profession might suggest could be enacted into a law.

And finally, gentlemen, if every one, in his respective sphere, and the local and State authorities, would do their full duty in the combat of this fearful scourge of mankind it would not be many years before tuberculosis would be eradicated from our midst, and we would have the honor, as in other instances, of being the first among the States to accomplish this great and glorious work.

"More Light."

"I honor him who still in age aspires,
Not satisfied by gains of younger years;
Who sits not down, or shed vain tears,
Because the heart has lost some high desires,
But scerches on; his spirit never tires;
Though eyesight fail, the inner vision clears,
One of the brotherhood of white-cowled seers
Who feed with sweetest oil truth's altar fires.
He does not heed the fast-descending sun,
The twilight gloom, the terrors of the night,
But says, in words of Attica's wise one,
'I grow old, learning'—youth-inspiring sight;
And breathes, exultant, when the day is done
With Welmar's dying sage, 'More light, more light.'"

Immediate Repair of a Lacerated Perineum.*

By P. A. Nicholson, M. D., Washington, N. C.

There are few, if any physicians, no matter what degree of skill they may possess, who if their practice has been at all extensive, in the branch of obstetrics, but have had on some occasion a slight or severe laceration of the perineum, due to child-birth; and I venture to say that the more careful the majority of us are in our post-partum inspection and examination,

the more lacerations we will be conscious of having. I do not mean to imply, that experience, good judgment and requisite skill, will not prevent in many cases a laceration; yet when all that is granted, and every precaution is taken, every measure employed to prevent this all too frequent accident, in some cases we do have such an extensive laceration of the vaginal floor and outlet, as to sometimes cause serious complication, not only of the puerperal period, but to delay the return to normal activity and impair perhaps permanently the supporting structures of the more important sexual organs above. These are complications which happen in the hands of the very best and most learned of obstetricians, and as such, are looked upon as unavoidable, and are most usually repaired immediately and skillfully.

Given a small undilated parturient canal, a large unyielding head, severe, prolonged uterine contractions, and a rapid birth, over or rather through, an unprepared resisting perineum, most usually the shoulder completes what the head only begins; should the floor of the vagina be torn and lacerated half-way to the mouth of the uterus, and the perineum lacerated from fourchette through sphincter ani, and the rectal wall divided upwards for an inch or more, the most unsophisticated of us could tell, that something out of the ordinary, had evidently happened, and would naturally begin to think of some plan for the repair of the damage, and upon the skill manifested and the immediate, (when I speak of immediate I mean a period not to exceed eighteen hours) coaptation of the divided structures will depend not only the future comfort, but health of that individual to the eternal damage of some gynecologists financial welfare.

I shall not dwell too lengthily upon the extreme type of perineum laceration, for in these cases a most superficial examination will realize the necessity for some surgical attention, if not the extent of the injury; but shall pass to the more frequent, less severe and often unrecognized and un-repaired types of the same accident, and this is where a superficial examination only shows a slight tear in the external portion of the so-called perineal body, extending from the fourchette to a greater or less degree posteriorly towards anus. A superficial examination would only show a slight nick or tear externally, or when the post partum inspection is left to nurse as 'tis often done, the report is made that everything is alright and not torn. Such welcome news is often to a tired and worn-out doctor like oil upon troubled waters, but the frequency of such favorable reports

*Read before the recent meeting of the North Carolina Medical Society, at Raleigh.

should not only make us egotistical, but should be taken "*cum gra—no salis.*" Now 'tis our duty in each case after the delivery of the child, to make a thorough and satisfactory examination, carefully noting the extent of the internal as well as external laceration of the parts, if any, and then to decide if the nature of the laceration is of such degree, that if unrepaired, it will in any way destroy or impair, through relaxation of vaginal wall or integrity of so-called perineal body, the support of the uterus and its appendages, or in future be liable to allow rectocele or cystocele to develop.

The examination should be made with the patient's buttocks at the edge of the bed, knees wide apart and flexed, some suitable instrument supporting anterior wall of the vagina sufficient to allow thorough inspection of floor. If there should be any doubt as to the advisability of operative interference then by all means repair at once. The operation is much more easily performed then, and the present and after results to a high degree more satisfactory to the welfare of the patient.

Nicety of coaptation is the prime object to be sought, not only of the surface of the vaginal mucosa, but of the deeper parts of the torn structure, so placing the sutures from top to bottom of cavity that upon approximation of divided parts there will be no pockets to hold pent-up serous fluids, or to catch and retain vaginal discharges, this with a sufficient degree of cleanliness, will insure satisfactory results.

The operation in itself is a very simple one, and this paper is not intended to deal in *its* technique, nor does it attempt to bring to your notice any new or original methods, whereby the perineum may be either saved or repaired, but having seen in my limited experience so many cases of unrepaired lacerations, resulting in the relaxation of the vaginal walls, producing prolapse of associated important organs, and hence a continued state of semi-invalidism, and general state of mental and physical impairment; that I have attempted in this very brief paper to bring to your attention the importance, nay the necessity, of a thorough and complete personal examination and inspection of all cases after delivery, that we may do our full duty in every particular to those who have intrusted themselves to our care, at this a most important epoch in the life of every female. For it can be truly said in these cases "a stitch in time does save nine," and really nine times in the saving of future discomfort, to these our most appreciative of patients.

Quinine.*

By Dr. James M. Parrott, Kinston, N. C.

From long and rather close observation, I am persuaded that the physiological action of quinine is but little understood by the average practitioner. It is not possible to witness the universal and indiscriminate use of quinine for all kinds of diseases, and at the same time believe for a moment that its effects on the system is understood in more than a meagre sort of way. I am sure all present have seen it given for almost every imaginable disease. In a general way it acts as all the bitter tonics. In small doses it promotes the flow of saliva and stimulates digestion. It adds force to the heart-beats and stimulates the vasoconstrictor nerves in small doses. In large doses it is a direct depressant.

Quinine checks diaphoresis by paralyzing the leucocytes, while it seems not to have any effect on, or, if any, to stimulate the leucocytes which are out of the blood vessels. This fact, (which is hardly of practical value) along with the idea that moderate doses lower temperature, soon led to its use in pneumonia, coryza, etc. In my opinion, no conclusion is more erroneous. While it may in moderate doses does, (and in pneumonia particularly, no one would think for a moment of giving it in very large and consequently depressant doses) really do these things in a limited way, yet in these diseases its disadvantages decidedly outweigh its advantages. We all know that the leucocytes in the blood play a very important role in the recovery of pneumonia patients. Quinine diminishes these. It also when given in moderate doses renders oxygenation, which is essential to cure much less easy, while it checks metabolism by interfering with protoplasmic oxydation. The reduction of visible leucocytes to one-fourth, as Bruce says it will do, along with its effect on tissue change through diminution of oxygenation should condemn it absolutely in every case of pneumonia, except perhaps in the very earliest stages of the attack. Even then its efficacy is doubtful. The administration of quinine is often followed by decided improvement in this disease, and the attending physician very naturally attributes it to his favorite drug. Careful observation will show that nothing could be more erroneous in most instances.

I am convinced that many, many times quinine is given in simple ephemeral fever on the supposition that the attack is a malarial one. A great many physicians, indeed, I expect that at times all of us have

*Read before the North Carolina Medical Society at Raleigh, N. C., May, 1904.

reasoned that since a given fever disappeared a few days after quinine is given, that hence it was malaria. When this statement is made in the absence of the patient, we all smile, yet we are all more or less guilty. We form a habit of diagnosing every fever case as malaria until it proves itself otherwise. These observations are confirmed by the following case which occurred in my own practice sometime ago.

I was called to see little H., age 4, one morning about 9 a. m. His mother stated that he had a chill that morning, accompanied by nausea and vomiting, and followed by fever. When seen he presented a furred-coated tongue, and temperature 105. I prescribed a purgative and quinine. The next day he was in his usual good health. Just seven days after I was called again. He presented same symptoms as before. I prescribed as before, with good results. Seven days thereafter I was again called to same patient suffering as before, in spite of quinine given the day and night previous. The mother incidentally remarked that the chill occurred about 3 or 4 o'clock a. m. I have never believed that malarial chills develop at night except in rare extraordinary cases. I immediately examined blood, no malarial organisms or pignat granules were found. Purgatives were administered, but no quinine given. Repeated blood examinations during the day showed no evidence of malaria. Large copious stools showed peanuts, orange pulp, apple seed and peeling, etc. Diagnosis then easy; from a close inquiry I developed the fact that his father, who was at home only once a week, gave him freely of these every Sunday. This error in diet was discontinued, and the patient has never a return of "chills." My early diagnosis of malaria was erroneous. The prompt results obtained were due to the purgative and not the quinine.

Another very interesting case came under my observation sometime ago which illustrates the idea under discussion, but in a somewhat different light. I was called by a colleague to see Mrs. S. in consultation. She gave a history of chills, fever and sweats. After a casual examination, I must confess the case looked very much like malaria. However, I knew the family physician was up-to-date and an able man, and I hesitated in making a diagnosis without the aid of the microscope. A careful blood examination was negative as to malaria, also as to typhoid fever. A systematic examination of the patient, however, showed an abscess which had begun very slowly after labor in left broad ligament and had burrowed upward in front of the psoas muscle, and was opened in the lumbar

region, extroperitoneally, of course, and the patient made an uneventful recovery. This case was also interesting because no symptoms were noticed by the patient until full two weeks after confinement.

When one treats every fever as malaria until it proves itself otherwise, one uses the therapeutic action of quinine diagnostically. The writer called the attention of the profession to this, as a course which should be condemned, several years ago. It is not only unscientific and unsatisfactory, but it is capable of great damage also. Simple ephemeral fevers, especially those of the old so-called "gastric" type, are unquestionably aggravated by quinine, and the preponderance of medical evidence is against its use in typhoid fever as tending ultimately to increase the danger of hemorrhage, also to disturb the stomach, and to aggravate or produce very disagreeable nervous symptoms.

From every point of view, its indiscriminate use in fevers is to be severely condemned. A diagnosis of any fever can be made quicker, and much more certain and satisfactory by the use of the microscope, and a careful study of the case as it presents itself, than by the use of quinine. In fact, it can be stated as an undisputed fact that a diagnosis cannot be made with a degree of certainty by its use alone.

A case came under my notice sometime ago which very nicely illustrates the point in question. The patient, a young man, when seen by his family physician, was told that he had malaria, and quinine was prescribed. The fever persisted, and after ten days or two weeks the doctor decided that in spite of all his hard work, "it (the fever) had run into typhoid." I saw him at the beginning of the third month. After a careful examination of the lungs a diagnosis of tuberculosis was made. This was confirmed by microscopic examination of sputum. He died of tuberculosis. Widal reaction negative in this case. In this patient quinine-diagnosis was worse than useless.

There are only three ways by which typhoid fever can be diagnosed, and those are: First, clinically (symptoms, physical examination of patient, etc.); second, chemically (Diazo-reaction, which in my hands has most often been a failure, and is not to be depended upon in my opinion); thirdly, microscopically, (Widal reaction, etc.) which is very reliable. Thus you see quinine is not one of them.

Of course, quinine is more generally and often used for the treatment of malaria and its various manifestations than for any other purpose. Since a 1-20000 blood solution has been demonstrated to be a sufficient

antidote for malaria, the question very naturally arises, why are comparatively enormously large doses so often and so generally given? A close chemical as well as theoretical study of the question will easily and quickly convince one that such doses are not only unnecessary, but are positively dangerous. Some years ago Koch attempted to prove that malarial hemoglobinuria was nothing less than quinine poison. Personally, I have no patience with this view, yet I am sure under certain conditions, which I discussed at length in a paper on *Mal. Hem.*, which was prepared for this society sometime since, and will not discuss now, this may be apparently produced, or rather, brought out by very large doses. This, however, would be impossible when the liver and kidneys function properly. Without question there is a quinine hematuria, but I cannot conceive, from a practical standpoint based on the physiological action of the drug, how it can produce a true hemoglobinuria.

How does quinine act as regards the malarial organism, and has it any effect on the toxic substances of this parasite if it produces such a substance?

The answer to the first section of the query, it was formerly considered that quinine acted as a simple antiseptic or germicide, that is, by its direct action on the organism. This conclusion was evidently reached by no particular reason. At F. A., King has advanced the idea that its action in the blood is due to its fluorescence. Its blood solution transmits only violet rays, and it is through these that its specific effect is obtained. This probably explains why quinine has no effect on the crescent malarial organisms, these being chiefly found in the darkest recesses of the body, (spleen, liver, bone-marrow, etc.) where its fluorescent properties have no effect. That sun light, or a light that approaches it most closely from spectroscopic standpoint, is essential to the development of the malarial organism is an established fact; hence malarial chills are very seldom, almost never developed at night unless the patient be exposed a great deal to strong arch light. Acting on this fluorescence theory, I have been using methylene blue with my quinine for some time, and I must say that I think I have gotten some good results from this combination.

In answer to the second section of my query, that as to the effect of quinine on the toxic substance formed by malarial organisms, I will ask is there produced such a toxic substance? While this question has not been positively determined, the preponderance of medical authority is certainly on the side of those who claim there

is. Some time ago Querollo demonstrated that the perspiration from patients suffering from malaria would produce genuine paroxysm; and hence concluded that toxic substance was present and in the perspiration. This may not be a rational conclusion. Ross has demonstrated that hundreds of malarial filaments can collect in the salivary gland of the mosquito, and it is possible, (though not demonstrated or even suggested as yet) that these filaments could be in the perspiration. Such high authorities as Roque and Lemoine tell us that large quantities of these toxic products are formed and are found in the blood, and they hold further that quinine acts on these products, assisting in their elimination through the kidneys, just how, they do not say.

Golgi has thoroughly demonstrated the fact that quinine destroys the organism at all stages of its development. Marchiafava and Biguomi believe that the intracorporeal parasites are incapable of further development after giving quinine. This observation is interesting, and is of some importance in determining just when quinine should be given. All who are familiar with the growth of the organism, and who have watched it after the administration of quinine know that even a single moderate dose will terminate the growth of a group if given just before its manifestation. Laveran, Golgi, Moneberg and others have shown that quinine acts more efficiently when given when the parasites are young and free in the blood. These observations lead us to conclude that it is probably best to administer quinine in several doses just before a paroxysm.

While it is not my purpose to discuss the proper dosage, and the manner in which it is to be given, yet it is interesting and valuable to note that most all authorities agree that 6 grains in 24 hours is a sufficient amount after it has been given one week in full doses for æstivo-autumnal malaria.

It is very questionable whether quinine is to be used with benefit as a prophylactic for malaria. Such a high authority as Celli has spoken strongly against it. It is certainly safer and more scientific to destroy its carrier, the mosquito, or else to protect ones-self against its bite.

In conclusion, permit me to say that I do not think that quinine is very indicated except for malarial infections, that sometimes even then it is probably best not to give it—notable in the asthenic type or variety of malarial hemoglobinuria; that its indiscriminate use is harmful, and that as malaria has gotten to be the diagnostic scape-goat, so quinine has become the therapeutic scape-goat of medicine.

Infection.*

By I. W. Faison, M. D., Prof. Medicine and Pediatrics, North Carolina Medical College, Dean of the Faculty, visiting Physician to the Presbyterian Hospital, Charlotte, N. C.

Mr. President and gentlemen of the North Carolina Medical Society:

I am here to-day to discuss with you one of the most important subjects that interest the medical men of our times. The subject that I have selected is Infection as it relates to infectious diseases. While it covers a very broad sweep, I shall endeavor to condense it within the scope of a short paper, that it may meet the desires of this Society and your good pleasure. The best minds of the most learned and painstaking medical men of the world are daily delving and nightly working to solve the mysteries that are confronting us. Almost daily some honest investigator proclaims some new theory that may or may not be true. The changes are wrung frequently, and that which may seem a positive fact to-day vanishes as readily on the morrow. If you try to keep pace with the risings and fallings of these assertions as they appear and you are not well grounded in your medical faith, you will become skeptical. Be faithful to the end, for these rapid evolutions will bring, in the end, only good to our store of medical knowledge. The germ theory to-day is a fixed fact, and through this theory comes our knowledge of infection, and the relations between the two in the production of the many diseases that infest the human system. With this fact or theory well established as a fixed principal in the our medical knowledge, we necessarily must reach out and seek for each specific cause of the different diseases and the sources or channels through and by which these infections enter the body. So far as I am able to learn up to the present time there are many specific pathogenic germs, producing similar pathological tissue changes in the body whenever these germs enter the body, and find a nidus suitable for them to reproduce themselves; and that there are five well established channels through and by which these specific causes enter the body, namely:

1st. By Contagion. 2nd. The Communicable. 3rd. The non-Communicable. 4th. By Abrasion. 5th. By Intermediary Hosts. I will discuss these different channels separately as briefly and as intelligently as I can, although I will try to be elaborate enough to clearly convey what I mean.

First, by Contagion; I desire to lay down the fundamental proposition that all contagious diseases are infectious but that all infectious diseases are not contagious.

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

There is a distinct and wonderful difference in the meaning and usage of these words, infection and contagion, when used by intelligent and scientific pathologists and bacteriologists. The great majority of all the diseases that the human race is heir to are infectious, while on the other hand very few, say five or six, belong to the group of contagious diseases. That you may more fully catch the idea that I am trying to inculcate, I will mention a few of the diseases which represent a perfect type of this group of diseases. Namely: Variola, Rubeola and Scarlatina. To-day the specific germs or protozoa that cause these diseases that I have mentioned are not isolated. Still we know they are some form of protozoa belonging to a low order of animal life but which are still beyond the skill and knowledge of the bacteriologists and pathologists to isolate and name. We also know that they enter the body through the channel of contagion. By this I mean that these protozoa can and do escape from the person effected and pass directly through the air current to and into the body in close proximity that is not immune, in spite of every known means by the most absolute asepsis that can be employed. In other words complete isolation is the only way that we can prevent non-immune persons from contracting contagious diseases. The second channel is the Communicable. Such diseases as Typhoid fever, Tuberculosis and Diphtheria are splendid types of the diseases that compose this group. The pathogenic bacilli that cause these diseases are absolutely isolated and named. I refer to the Typhoid.

The Tubercle and the Klebs-Loeffer Diphtheria Bacilli. It took years and years to establish these facts but to-day it seems to all that it has at last been correctly settled. The interesting part of it to us is how do they get into the body. We no longer consider as tangible the idea of contagion. They are not contagious and do not pass into the body by that channel but it is now an accepted fact that they are communicable and that by this way they are carried from one person to another. By the communicable channel I mean that the bacilli are thrown off in the excreta or sputa and by means of water, the hand, a toy, or in the dust, the bacilli are communicated to some other person and the disease in kind is produced. The third is the non-communicable. The diseases of this group are neither contagious nor communicable and just how they are reproduced I do not know, we do know that they are not contagious nor communicable. Non-immune persons in the same room with persons sick with this class of diseases do not contract them. Acute Articular Rheumatism and Purpura

are types of this group. For my purpose to-day I will only mention Acute Articular Rheumatism. To me this is one of the most interesting. Earnest and careful investigations are being made concerning Acute Articular Rheumatism, just now. The consensus of opinion is, that it is due to some specific micro-organism. The war is waging to settle the specific cause: Anders says the weight of authority is in favor of a diplococcus as its principal cause. F. Meyer insists that it is a peculiar infection due to a streptococcus. Tibulet, Wasserman, Paine and Ryffel in their various investigations found a tiny micro-organism frequently present in their cases, which they were not able to distinguish from other forms of streptococcus. Walker and Ryffel later have called this organism *Micro-coccus Rheumaticus*. We must in patience wait for further investigations and hope that it will be settled correctly. Upon this settlement depends the fixed position as to its curability and its chronicity. I am of the suspicious opinion that when this is done the literature of chronic rheumatism will have to be rewritten and perhaps left out of our text books.

The fourth: By Abrasion. The diseases that represent this type are septicæmia, pyæmia and puerperal fever. It is important to fully realize and fully estimate the dangers of this channel. That we may be wise and cautious enough to prevent the ingress of the specific germs that produce these diseases in the body. The old adage that "cleanliness is next to Godliness" holds good here.

The Fifth: By Intermediary Hosts. The type of the diseases that are transmitted in this way are, yellow fever, dengue and malarial fever. The hosts are rat-fleas, flies, house and tsetse, ticks and mosquitoes. I will mention only the malarial fevers. For the past few years this subject has been in the crucible of investigation. The dawn is beginning to break and I feel that in a very short period the pathologists and bacteriologists will positively enunciate to the medical world the absolute and fixed facts concerning this important malady. Within the past few years great changes have been made in our medical position. The old idea of telluric influences in producing malarial has been set aside. No longer is it claimed that heat, moisture, soil and vegetable matter have to do with the producing of the causes of malarial fever. No longer is the position of miasma, swamp air and the like, as causes considered tenable. Dr. Grassi, of Rome, says there is no such thing as malarial. The word plasmodia no longer conveys the same meaning to us that it did just

a few years ago; in fact Dr. Welch suggests that hæmamebæ would be a decidedly more correct name. With these facts before you, you can and do readily realize how rapid and complete are the changes that are taking place. Then what and where and how do the causes of so-called malarial fevers generate and become transmitted to the human race? Gen. Ross, U. S. Army, in his investigations in 1897 in Africa, discovered and proved beyond controversy the fact that the mosquito was the channel through which the causes enter the human body. It is to-day an established fact, accepted by the latest and best investigators that this is the only channel through which this special cause of this disease enters the body. Further investigations have proven that of all the mosquito families only four can transmit this cause and of these four only two, the female portion of the tribe, can transmit it—as it is only the female that bites. This branch of the mosquito family is known as the anapholes. The cause of malaria, call it plasmodia or hæmomæbia as you like, is reproduced in the stomach of these mosquitoes, carried there in the blood sucked from the person infected; it rapidly reproduces itself, passes out through the lining membrane of her stomach and makes its way into the salivary glands and into the proboscis of the mosquito. When she bites she sticks her proboscis through the skin and this poison, or cause, is thrown out into the body. These hæmomæbæ make their way into the red corpuscles of the blood. These causes are of three distinct types, producing tertian, quartan and estivo-autumnal fevers, according to the type to which they belong. The clinician has been in the lead for some time in regard to malarial fevers and long ago established the fact that quinine is a specific in their treatment. To-day it stands absolutely true. With these scientific facts before us our duty as to preventive measures is plainly marked out for us. Remove all cesspools; if not possible to do this have the pools covered with petroleum oil once a month; close and fill all unused wells; screen completely every opening in the house in which people live, or use mosquito-netting over every bed occupied by a human being; go in-doors at nightfall. It is best to sleep in the second story as it has been well established that mosquitoes go about but little during the day time. They do not fly high from the ground, and a very important fact is that they wander but a short distance from the place where they are brought into existence.

Surgical Treatment of Retro—Displacement and Prolapsus Uteri.*

By C. M. Strong, M. D., Prof. Clinical Surgery and Gynecology, N. C. Med. Col., Charlotte, N. C.

To any one whose practice has to do with treatment of diseases peculiar to women, the frequency of these conditions must appeal to him. In this category you notice that I have not placed anti-displacements because of their rarity, and the absence of symptoms, together with the absence of treatment, aside from dilatation and wearing of tube; which often gives good results in my experience, and too, in anti-displacement, the uterus can't well descend. A retro displacement, unless held by adhesions, almost always prolapses and a prolapsed uterus, in most cases, is a retro displaced one. Where the uterine axis is parallel to that of the vagina and supports are weakened, practically speaking, this is a retro displacement. Two conditions being present, i. e., displacement and prolapsus, two indications for treatment are obvious, restoring uterus to normal position as regards the antero posterior as well as the transverse plane of pelvis. In order then to better understand the treatment, we must necessarily study.

- 1st. The supports of normal uterus.
- 2nd. The causes which produce or increase the displacements.
- 3rd. The symptoms which call for relief.
- 4th. The operative measures used to accomplish the relief.

1st. *Normal Supports of Uterus*—Normal uterus is movable and hangs between rectum and bladder in an antverted position, the os pointing to the post vaginal wall or lying in contact with it, and is supported, 1st, by ligaments; 2nd, by tissue below the ligaments, consisting of muscles fascia, etc. There are eight ligaments, four on each side. 1st. Broad ligaments. Broad folds of peritoneum closely adherent, which firmly invest the body of uterus to pelvic wall, they contain a certain amount of muscular fibre, continued from uterine wall, posteriorly they are reflected upward to rectum and posterior pelvic wall, anteriorly on bladder and anterior aspect of pelvic cavity. Possibly to these are ascribed the greatest influence in the retention of uterus in its normal position, and to their relaxation and failure to restore same, many a failure might be attributed.

2nd. Vesico uterine ligaments, of less importance, stretch from anterior body of

uterus to the fundus of bladder and thence to the anterior abdominal wall. The connection between bladder and uterus being less close than rectum and uterus, less would be expected of these as a support. Round ligaments. Extending from each uteri cornuæ between layers of broad ligaments pass into the internal ring and loose themselves in canal of Nuck. They contain Striated Muscular fibres, subject to the influence of the will, they act as guy ropes, preventing the uterus from tipping backwards.

Utero Recto—Sacral ligaments, extend from posterior attachment of vagina to uterine cervix to be attached to sacrum, dividing to inclose the rectum. These folds also contain muscular fibres. Between these folds is the pocket known as culde sack. The part they play is very important and are said by Jennings, of New York, to be the only ligaments that are taut while standing. Between all these layers of peritoneum called ligaments, is cellular tissue, nerves, bloodvessels, etc., which have undoubtedly, some influence in supporting the uterus. Other supports of the uterus are the tubular muscular canal, the vagina which helps to hold up the uterus, this tube resting upon the muscular body the perineum. Anteriorly the body of uterus is supported by bladder which acts as a water cushion, post the rectum acts in the same manner. Two layers of pelvic fascia aid in the good work: 1st. Representing transverse plane from middle of sacrum to lower border of symphysis pubis making roof for vagina and base from bladder.

2nd. Representing plane, also transverse from tip of coccyx to the lower border of symphysis, representing a triangle base posteriorly apex anterior which serves to keep the uterus pushed forward in normal position. The perineum has a slight supportive effect due principally to the levator ani and sphincter ani-muscles. The so-called perineal body has very little if any. The movable conditions of abdominal viscera produces a certain amount of tension upon all those ligaments, and upon the post wall of a normal uterus helping thus to keep it in right position. The uterus being a movable organ, the normal position varies, but the mean is, that the longitudinal line of vagina should meet the one of uterus at external os at an angle of 45%. To assist these is the intra abdominal pressure exerting a force upon posterior part of fundus equal to 25 or 50 lbs. We see so many things enter into the support of this organ that we are not surprised that the condition is a very difficult one to cure.

Symptoms Which Call for Relief—A

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

retro displacement and certain amount of prolapsus may cause no inconvenience, hence does not call for treatment, but in consequence of interference of circulation, uterine catarrh, with excessive leucorrhœa, also the misplaced ovaries causing all kinds and conditions of pain. Adhesions of uterus and adnexa to peritoneum, narrowing lumen of gut, causing persistent constipation, and pressure on ureters, causing pressure nephritis, which I have more than once seen relieved by operation. All these call for relief.

Causes of Displacements—Anything that weakens any of these varied supports, or increases the intra abdominal pressure, often due to compression of thorax and upper part of abdomen by corsets, tight dresses, etc., especially if there is a tendency for the fundus to tip backwards. Constipation, by pressing uterus downward and backward, also over filled bladder. Child birth, by far, most common, causes sub involution which enlarges uterus and weakens support. Laceration of perineum and component parts, E. Levatorani Muscles and two layer of fascia being very important supports. Destruction or weakening of the tubular vaginal support, inflammatory condition of adnexa. Occasionally a sudden jump or fall in virgin may produce it.

Treatment—General—Therapeutical measures are indicated but will not speak of them in this paper nor will speak of Mechanical support. In some cases, (very few), we may get some results, but I am supposing that these have been tried and found wanting, which has in my experience been too often the case.

Surgical Treatment—Almost every month some man comes forward with a new operation for cure of this condition, which is an eloquent witness that there is no sure cure. This can readily be understood from the above study of the supports of the uterus, which are many and varied. Where the perineum has been torn and the other supports are in tact, repairing it will suffice, but we know that the perineum alone has only a limited power in sustaining the uterus, for all of us have seen extensive tears of this organ with no displacements. Where the vaginal tube has been weakened, muscles torn, repair by "Noble Methods" of dissecting up mucous membrane and uniting the muscular fibres, and fascia is satisfactory, especially where the levator and sphincter muscles are involved, and in our experience this has a considerable effect in supporting uterus. Where the ligaments are relaxed, Alexander's operation has been extolled, but as we have attempted to show, they have a very

small effect in helping to hold up uterus and are rarely alone effective. We expect, and have found this very unsatisfactory when done alone. Another operation devised by Boston man, I can't recall, in which the round ligaments are brought through the broad ligaments by forceps, then stitched together back of uterus. We have tried in one case with fairly good result, where there is not much prolapse I think it very good. Bissell's operation for shortening of utero—sacral, has never been tried, but I think it impracticable because of the difficulty of reaching them, which would make it a very severe operation. The theory is good.

Where we Have the Extreme Prolapsus and Retro Displacements with a Giving Away of all the Supports—We have the ventro fixation in which the uterus is stitched into the abdominal wound, which will certainly hold it there, but what about subsequent pregnancy. We find that it gives a woman great deal of pain because we change one pathological condition to another of a fixed uterus, especially during menstruation. The text books say is only applicable where the patient has passed the child bearing period. I am convinced that when we do this operation we should render the patient barren, and we can do this by taking out a V shape piece from ampullæ of fallopian tube and sew up with fine silk or can castrate: We owe this much to the subsequent well being of patient. Then we have the ventro-suspension, which consists in attaching the peritoneal coat of uterus to the parietal peritoneum of abdomen, which forms a ligament, allows some motion of uterus. This has proven the most satisfactory in our hands, although I have had notable failure in this. The advantages of this operation are the ease and rapidity of operation and freedom of danger. This was an extreme condition in which all the supports gave way. The perineum, vagina and cervix were repaired at one operation; at a subsequent one, ventro suspension was done, and the condition is almost as bad in this extreme case as in the commencement. Nothing has been done to shorten or draw up the broad ligaments which is one of the main supports of the uterus, and to this I attribute my failure, and for these cases would do the ventro fixation method with castration and repair of other supports. There is therefore no ideal operation for these extreme cases. I have in my minds eye, and shall try it in such cases, this operation: Repair at first operation all external tears, then shorten the round ligament by bringing back of uterus, then lapping over in form of a cross the broad ligament, being

careful not to compress any important vessels, then ventro suspend and render sterile the woman. The uterus should be curetted as first step in all these operations.

Labor will effectually try any of our methods and a temporary cure is not very assuring to an operator. Possibly with a more skilled operator these conditions might be different, but in reading the discussions of this subject by our leading operators, we find the various methods lauded and then condemned, which leads us to infer that they all must have some failures, and that their cure is not so easy.

My position as instructor of operative gynecology and abdominal surgery, in North Carolina Medical College has given me some opportunities of trying the different operations, and the number of cases presenting the different phases, has been surprising, for every day almost, a woman presents herself, suffering with some form of this trouble. The results of operations have been, in main, satisfactory, but all have failed. Possibly some one here can offer a better operation, and if, in the discussion which I respectfully invite, (because of its importance to suffering woman-kind,) any additional light can be given to us, I shall feel fully repaid for these rather lengthy and random remarks.

A Modern Method of Treating Morphine, Whiskey, and Other Drug Addictions.

By S. M. Crowell, M. D., Charlotte, N. C., Prop. of The Crowell Sanitarium.

Morphinism is a disease induced by the abusive use of morphine. The greater part of this paper will be devoted to this one subject. The Greeks, in the time of Hippocrates, were acquainted with the use of opium. It is said by some that the drug sent to Helen from the wife of Thone, described in the fourth book of the "Odyssey" by Homer, was evidently opium. The Arabs later introduced a knowledge of its properties to India and China, but it was five hundred years from the time of Hippocrates till it was unfortunately found out that opium, like alcohol, would produce pleasurable sensations. Since that time, men have used it so indiscriminately as to bring on disease and death. But the advancement for the treatment of this class of patients has been sorely neglected.

Various hypotheses, without clinical verification, have been advanced. Some authors advance Gradual Reduction; others, Rapid Reduction; others, Sudden Withdrawal. Some evolutionists say by elimination of the unfit, and last and most savagely,

some writers say it is useless to treat such a disease, the only alternative for the unfortunate victims being to lock them up and let them writhe out their miserable existence as best they may.

Away back in some remote age, some ignoramus asserted that all such unfortunates were liars and thieves who were beyond redemption by scientific skill. For a lack of clinical advantages, it is a sad fact, that this primitive idea still predominates the minds of some of our present day writers. With due reverence to all, the writer thinks that this is a disease amenable to treatment with good results when the proper method of treatment is pursued, and to his mind the only rational method is the Sudden Withdrawal of the drug—the cause of the disease—just as you would, as rapidly as possible eliminate the source of infection in any disease—as for example, in malaria. Under proper conditions, this course can be pursued without any danger to or undue discomfort on the part of the patient.

The *Ætiology* is well understood and will be dismissed with a plea to the physicians to be more careful in its administration to patients, and will give a mild warning for their own benefit by citing them to the case of the well known English man-of-letters, DeQuincy.

The Pathology is only functional, hence, more amenable to treatment than diseases in which the pathological changes are of a structural nature. The entire system is impregnated with morphine and its by-products, and toxines generally, as a result of faulty metabolism and defective elimination. As a result, the functions of the body cells are benumbed and perverted, and when the drug is withdrawn *without* the proper preparation, this perversion of the functions is manifested in a way familiar to all who have witnessed the phenomena. This perversion is marked by fever, acute pains, nausea and vomiting, diarrhea, dysentery, profuse sweats, etc. This is not due primarily to the withdrawal, but to the general toxemia and these symptoms have been kept obscure by the benumbing paralyzing effects of the opium.

These unpleasant symptoms can be wholly avoided by the proper treatment. This assertion, contradictory to the writings of eminent writers, might appear rather presumptuous, but the statement has been verified by a careful study and clinical research by the writer. By the gradual reduction methods, it is impracticable to remove the pathological conditions until the patient is in such a condition that he has neither physical strength nor mental firmness to resist the slightest pain or temptation. In all the Gradual Reduction Meth-

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

ods, the patient is given medicine or so called "tonics," all the time he is in charge of the physician, presumably to take the place of the morphine, and is usually sent home with a sufficient amount to last for from one to three weeks. The result most reasonably to be expected too often occurs, i. e., the patient begins to "substitute" himself, and he is not altogether to blame, for the mind is so constituted that when it has been trained for so long a time to do a thing, that it clings tenaciously to that idea. The rational idea is to eliminate the effete material from the system as rapidly as possible, and give medicines only as indicated. Teach the patient while he is still under your observation how to live without drugs instead of encouraging his fixed dependence upon them. *But by the Sudden Withdrawal Method*, there is an idea prevalent that there is danger of collapse, heart failure, etc. *This is not correct.* Should the heart derive any stimulus from the morphine, in this stage, the elimination of the effete material from the system, and stimulation of the various cells and glands of the body, and the consequent relief to portal, venous and lymphatic congestion would more than compensate for the stimulus derived from that drug.

The Eliminative process is begun upon the patient's appearing for treatment, (and by this method you must have the patient confined to a well regulated hospital under the constant surveillance of a trusted nurse). He should have a hot bath, also a simple diuretic. Beginning in the afternoon, give a brisk purgative. Ordinary purgatives will not answer in these cases for the nerves are benumbed by the opiate, and the good results depend very materially upon the completeness of the elimination. The patient should not have any supper. The purgative employed by us consists of the following: R.—Hydrarg. chlorid mite; cascarnine; ext. Colocynthis Co. AA, gr. X; Pul. Ipecac; Aloin, AA gr. II; Strychnine Nitratis, gr. $\frac{1}{2}$, M. et ft. capsules No. IV, Sig—One capsule at 4-6 S-10 p. m. Give his accustomed dose of morphine till bed time, say 10 o'clock, when he takes the last capsule. From 5 to 8 hours after giving the last capsule give a hypodermic of nitrate of strychnine, say from gr. 1-40—gr. 1-20. This aids the heart's action which is yet laboring against its burden, as well as to increase intestinal peristalsis. Also give some saline cathartic at this stage. If necessary to start up lower bowel action, give an enema of warm water and repeat if necessary. Repeat the saline and enemata until the elimination by the bowels and kidneys has been well started up. This action upon the organs of the alimentary and urinary

tracts does not complete elimination, by any means, but the greatest obstacle has been overcome so that the stimulation of, and the consequent elimination by the secretory and excretory glands will soon complete itself.

The most of the other disagreeable symptoms that would arise by this or any other method are nervous and mental and of short duration. These, of course, could be allayed for an indefinite time by a dose of morphine, but upon the subsiding of its effects, the patient's pathological condition would be just about the same as when treatment was begun as the morphine would dry up secretions and check the elimination. With properly selected drugs, the disagreeable nervous and mental phenomena, incidental to the completion of the elimination, can be avoided and the process of recovery not interfered with. The time required to administer these drugs varies from 24 to 48 hours after the process of elimination has been well started up. At the end of that time, the patient usually needs but little, if any other, medicine, and will remain comparatively comfortable and free from all craving for the original drug, appetite and digestion good; will sleep sufficiently, and his stage of convalescence materially shortened as compared with that by the various Gradual Reduction Methods.

Hyoscine Hydrobromate is an ideal drug to control the patient during the nervous and mental stage referred to above. It acts as a nerve sedative; produces comfort and thus prevents that indescribable feeling incidental to withdrawal of morphine without the proper conditions, but has none of the bad after effects produced by opiates, and can be discontinued without any inconvenience to the patient.

The administration of the Hyoscine should be begun as soon as elimination has been well started up, or as soon thereafter as abstinence symptoms manifest themselves. The dose varies from gr. 1-300 to gr. 1-50 hypodermically, at periods varying from 30 minutes to 6 hours. At first give the smaller doses, and repeat till sleep is induced or the patient is easy and free from pain. As the dose in one patient is no rule to that in another, the physician must be present constantly during the administration of the Hyoscine so as to notice the effects and determine the succeeding doses. The Hyoscine, properly given, does not act injuriously nor have bad after-effects on either the body or the mind, therefore, it should be given until the full physiological effects are manifested, i. e. to the point of delusions and hallucinations.

The patient should be kept thoroughly under its influence for a period of 24 hours;

then its effects allowed to subside. If at the end of this time, the patient expresses a desire for morphine or if he is uncomfortable, a full dose of Hyoscine should be given and after its effects have subsided, it should be repeated, if necessary, until he manifests no more desire for the morphine.

If elimination has been thorough, it will rarely, if ever, be necessary to continue Hyoscine over 24 to 36 hours. At the end of this time, the patient will remain free from all pain and nervousness, will sleep sufficiently, have no craving for morphine, and in a very short while an excellent appetite, with digestive organs in a good shape. It is very rare that any other medicine is needed, and should not be given as a routine treatment. When given, after this stage, the medicine should be administered with a specific purpose, and the patient made to understand that it is no substitute for the morphine. Never dismiss the patient taking a "tonic." Hot baths, alternating with cold douches, should be given frequently, the kind and frequency depending upon the condition of the patient. They aid in elimination, keeping the skin in a healthy condition; producing sleep and thus exciting the various cells to normal activity.

The diet should be nutritious and easily assimilated. *Do not permit alcohol in any form during treatment*, and thoroughly impress the patient with the danger of using it *after* treatment for it invites a return to the use of morphine. Teach the patient that he must live without artificial stimulation.

The time required for a restoration to health varies. One person may be more thoroughly cured and fortified against relapse in two or three weeks than another in so many months. This depends to a great extent upon how the disease was produced and how anxious the individual is to be cured. With proper warnings of the various sources of danger, and the proper mental suggestions, this class of patients can be very thoroughly fortified against relapse during his stage of convalescence.

Electricity, in its various forms, adds very materially to the patients comfort and progress to restoration to health. With some variations, this method can be used just as successfully for the whiskey and other drug addictions.

Immunity.*

By Albert Anderson, M. D., Wilson, N. C.

Infection and immunity are correlated subjects and these have interested and en-

gaged the leading scientific minds of the past century.

What we understand by immunity is that power or ability in the human organism to prevent the introduction and the effects of bacterial poisons: Or immunity may be the result of the work of these bacterial poisons.

It is classified as followers—Congenital, acquired, individual or racial.

Immunity is artificially acquired by the introduction of another infection, as vaccine virus: by the introduction of cultures properly prepared for this purpose; by the introduction of serum from immunized animals. This form of induction is not as lasting as that inherited or produced by a previous attack.

The mechanism of immunity has been put upon many bases, but no basis supports the whole truth and there is some light thrown on this interesting question through all the theories, from the early one of Cheaveau down to Ehrlick's Chemical affinity.

It was thought at one time that anthrax bacilli killed by a mechanical plugging of the blood vessels: But soon a step was taken forward and the fact ascertained that it was the toxins that killed.

Cheaveau advocated a partial truth in stating that immunity came about by the cells of the body becoming accustomed to the presence of toxins—parallel with the well known fact in therapeutics of the increased tolerance of drugs. Pasteur, perhaps the one of all others who towered above as the loftiest peak in the range of bacteriological workers, advanced the theory of exhaustion which has been proven by Bitter to have no evidence at all for its support. And we learn from this theory of the great Pasteur, that it is possible for the greatest to make mistakes.

To my own mind the most fascinating doctrine is Phagocytosis, the principle of which is that "The wandering cells of the animal organism, the Leucocytes, possess the property of taking up, rendering inert, and digesting micro-organism with which they may come in contact in the tissues."

But about four years later, 1888, Nuttall of our country put forth a theory involving scientific principles "upon which rests all serum therapy, that of the anti-bacterial action of the animal economy." He proved that the leucocytes did not do the work attributed to them by Metchinkoff, but the serum of the blood was the germicide mainly. In the application of these principles, Behring and Roux got ahead of our countryman and produced Antitoxine Diphtheria, but let us not forget Nuttall and demand for him equal merit with these two

*Read before the recent meeting of the North Carolina Medical Society, at Raleigh.

and as high a niche in the temple of Serum therapy—for he was the one who first laid deed and sure the basis of this wonderful discovery—which gives immunity and cures disease.

By those who have the best right to know, Ehrlick has promulgated the workings of how this wonderful thing, immunity, is produced and made it so plain that there is no longer any use to speculate about it and at this point I am reminded of that witty expression of the lamented Dr. O'Hagan regarding a case of small-pox. "So plain was it that a wayfaring man though a d— fool could tell it afar off." But to me Ehrlick's theory of chemical affinity in both natural and acquired immunity is as difficult to comprehend as the differential diagnosis, to some doctors, between varicella and variola. I quote: "In natural immunity the cells of the animal organism do not furnish side chains capable of forming a chemical union with the toxin. Acquired immunity is due to the over production of receptors by the cells of the body. Those which are produced in excess of the requirements of meeting and counteracting the toxines present are thrown off into the circulation and remain ready to combine with any toxin having the same affinity that may thereafter be formed or gain entrance to the body." Antitoxins of diphtheria, tetanus, bubonic plague and streptococcus infections are sera which have done the most valuable service.

It is known that antitoxin may disappear from the blood without necessary loss of immunity, and death may occur while the blood is saturated with anti-toxin. It is only a neutralizing agent, not one of regeneration. By it the body is able to resist and counteract infection and only in this way assist in restoring the body to health.

As stated above Ehrlick to me is hard to understand and I wish to quote Behrings definition of his antitoxic theory. "The same substance, which, when incorporated in the cells of the living body, is the prerequisite and condition for an intoxication; becomes the means of cure when it exists in the circulating blood."

Of all the sera, that for diphtheria has given the most brilliant record, having reduced the mortality from 40 to 15%. That for tetanus has not given the desired results. That for streptococcal infection acts well in one but not in mixed infections. Those for typhoid and pneumonia are in the experimental stages.

The anti-plague serum has greatly reduced the number of cases and mortality from 33 to 13%. Mixed infections is the great obstacle to overcome and it has been

suggested to determine the mixture and use the sera accordingly.

After selecting this subject I almost despaired of preparing a paper till I saw our program and there I learned that Dr. Faison was coming with infection and that I had to prepare an immunity for my fellow co-laborers at this meeting, to counteract perchance, some fatal toxine infection that the Doctor might bring. So rest assured I'll protect you so far as I can.

Immunity! what a blessing!! In epidemics of small-pox, measles, scarlet fever, diphtheria, typhoid fever and others, we appreciate the value of immunity natural or acquired, individual or racial and to obtain this inestimable blessing is the end to which we must attain by any or all means—money, time, labor or sacrifice.

So let the profession say to the scientific searchers after remedies conferring immunity upon the human race, labor on at last at our expense till they are found and we will place you in the galaxy of immortals—Jenner, Pasteur, Nuttall, Behring, Raux, Ehrlick and others. So I would request the author of infections to join with me in conferring immunity and thus increase longevity and happiness by the conscious security and integrity conferred by this wonderful quality.

I have not undertaken to spread before you the different theories of my subject in detail as promulgated by Metchnikoff, Chéaveau, Ehrlick and others for this good reason. I do not fully understand them and I refer you to the standard books for explanation and content myself in saying to you that immunity from infections is the greatest thing the body can possess.

Use of the Cystoscope.*

By A. J. Crowell, M. D., Charlotte, N. C., Professor Genito-Urinary, Rectal and Skin Diseases in the North Carolina Medical College. Visiting Surgeon to Presbyterian Hospital, Charlotte, N. C.

In presenting this paper on the use of the cystoscope, we claim no new discovery or therapeutic value in the use of the instrument, but wish to emphasize its value in diagnosing pathological conditions of the prostate, bladder, ureters and kidneys. Prior to the invention of the cystoscope we were at a great disadvantage in arriving at a correct diagnosis of many of the diseased conditions of the Genito-urinary tract. In experienced hands to-day it gives opportunity for examination and inspection equal to that afforded the rectal specialists by the rectroscope, the laryngologist by the laryngoscope, or the gynecologist by the spec-

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

ulum. The instrument was invented and first used by Dr. Max Nitzer, of Berlin, in the year —, but has not been used extensively until within recent years.

The cystoscope, as you are aware, is an instrument for enabling the eye to observe directly, or by reflected light, the interior of the bladder wall. It is a tubular instrument from 7 to 11 inches long and varying in size from 18 to 24 French scale, and so constructed as to pass readily into the bladder. There are lenses in the tube to magnify the field of vision and mirrors are placed so as to make it possible to observe the prostatic area and the whole of the interior bladder wall. A small electric bulb is placed on the end of the instrument to furnish the necessary light which can easily be removed and another bulb inserted in case it burns out. When required for use the electricity for lighting can be obtained from an ordinary incandescent light after regulating the current with a rheostat. The technique of the examination is simple. The instrument should be thoroughly cleansed with soap and water and sterilized by wiping with pure carbolic acid and then placed for ten or fifteen minutes in a strong carbolic solution. The instrument should be rinsed with sterile water before insertion. The patient is placed on a table with the head a little elevated, the thighs slightly flexed and feet resting in chairs beside the table or stirrups for this purpose. This position is comfortable to the patient and very convenient for the operator. Thoroughly cleanse the pubes and genitalia of the patient, irrigate the urethra with a 1:5000 solution of permanganate of potassium, insert a sterile catheter and irrigate the bladder with a saturated solution of boric acid until the water returns clear. (Some of the cystoscopes are so made that the bladder can be irrigated after its insertion). Then insert half an ounce of a 4% solution of cocaine through the catheter into the bladder and allow to remain for two minutes. Again irrigate and fill the bladder with sterile water. After withdrawing the catheter fill the anterior urethra with the 4% cocaine solution, and hold for a minute or two and the patient is ready for the insertion of the cystoscope. Always test the light before inserting by making connection with the electric current. The instrument is then lubricated with sterile glycerine and passed into the bladder just as an ordinary sound, a procedure which is almost painless.

There are certain indications and contra-indications for the use of this instrument which it would be well to stop here and enumerate. It is indicated in all chronic bladder and prostatic troubles as well as

suspected kidney cases. The contra-indications are, as a rule, acute conditions of the Genito-urinary tract, such as specific urethritis, epididymitis, cystitis, pyelonephritis, prostatitis and seminal vesiculitis. Some writers claim that hypertrophy of the prostate is a contra-indication, but the cystoscope is indicated in every such case, and especially so if you are considering an operative procedure. On looking into the cystoscope, first inspect carefully the mucus membrane of the bladder wall—note its general appearance, whether smooth and velvety, roughened, thrown into rugae, the condition of the blood vessels, presence or absence of diverticulae, ulcerations; and if ulcerations are present observe location and character, whether tubercular, malignant, inflammatory, traumatic, or simple catarrhal in appearance. In all cases of chronic cystitis, which is one of the most common conditions with which we have to deal, you invariably see dilated blood vessels with mucus membrane thickened and thrown into rugae. The causes of chronic cystitis are usually partial retention of urine due to hypertrophy of the prostate, stricture of the urethra, new growths, foresors, or foreign bodies, and can only be determined positively by the use of the cystoscope. There are, of course, certain other conditions which will produce cystitis, such as obstruction to the visceral circulation, pressure, and cases secondary to acute infections. It is evident that these troubles cannot be treated successfully without first finding out the specific cause. Where hemorrhage is not profuse, wounds, contusions, or rupture of the bladder wall can be readily recognized and the extent and severity of the injury determined. Fistulous openings can also be easily located.

Among the new growths, papillomata, polypi, fibroids and carcinomata not uncommonly occur in the bladder. Such growths cause very obscure and often troublesome bladder symptoms, the cause of which can only be determined by the use of the cystoscope. The location and character of the tumors are also found out, and the advisability of removal decided upon. Recently a young man 22 years old came under my care, suffering with partial retention of urine and cystitis. The cause of his trouble had not been diagnosed but the cystoscope at once revealed the presence of several papillomata at the urethral opening, one of which acted as a valve to occlude the outflow of urine. After a suprapubic cystotomy and removal of the growth the symptoms of retention along with the cystitis, disappeared. Foreign bodies in the bladder are often sufficient to produce pronounced symptoms, but yet not large enough to be

detected by the stone searcher. In such cases the cystoscope will reveal their presence. Even in cases in which a stone is sounded, we can by seeing its size, determine the operation indicated. Two cases which I recently operated upon illustrate the value of the instrument. In one the stone was seen to be too large to crush and was removed by suprapubic cystotomy, in the other the stone was not so large and was removed by litholapaxy. Both cases did well and the results were equally satisfactory, but the suprapubic case remained in the hospital three weeks, the other only a few days. In another case we could detect nothing with a stone searcher but the cystoscope readily revealed a small stone which was removed by litholapaxy. A subsequent cystoscopic examination showed the stone had been entirely removed.

Former failures of litholapaxy have been due to the want of following the operation by cystoscopic examination to determine if all the fragments have been removed from the bladder. We have seen other foreign bodies removed from the bladder, such as hair-pins, and slate pencils, introduced by masturbating females, recognized by the cystoscope, which were not previously found by other means. The oblique light of the instrument is used for examining the prostate and is found very beneficial in determining the nature of hypertrophy of the gland. In many cases digital examination will detect but little hypertrophy, when a cystoscopic examination will reveal a pedunculated middle lobe sufficient to produce marked retention. I have lately seen one case of such a character with complete retention. It is always important to first inspect the site for the incision before doing a Bottini operation.

In diagnosing ureteral and kidney trouble, the cystoscope is of incalculable value. On inspecting the ureteral openings we note their appearance, as to size, dilatation, secretion, inflammation, and whether or not one or both openings are involved. Inflammation or ulceration around one ureteral opening is strongly suggestive of tuberculosis of the corresponding kidney. Large and dilated ureters usually accompany chronic cystitis with retention. We next observe the secretions, whether or not they are simultaneous, clear or cloudy, the presence or absence of blood or pus. When only a small amount of blood or pus exudes it cannot be detected without the use of the microscope. Simultaneous secretions show the presence of two functioning kidneys, but the functioning power of each can be determined only by catheterization and measurement of the amounts of the secretion. The discharge of blood or pus indi-

cates some diseased condition on the side from which it comes, either in the ureter or the kidney.

Catheterization of the ureters is indicated when we have an acid urine with pus, blood, albumen, tube cast without bladder symptoms and no pathological condition of the bladder as shown by the cystoscopic examination; and it is especially indicated if there is inflammation or ulceration about one of the ureteral openings. (An acid urine is found in tuberculosis of the bladder but the cystoscope will reveal this condition). For catheterizing the ureters we have two instruments—the direct and oblique. We use the direct. In the hands of a skilled operator the passage of the catheter is usually very easy. The difficulties encountered in catheterizing are diverticulæ, and obstructions from stricture, impacted stone, and pressure from various causes. The benefit derived from this procedure is obtained chiefly from an examination of the secretions collected. The secretion from each catheter is carefully collected for several minutes and the amounts measured and compared. This gives us the relative activity of the two kidneys. In case no urine is passed from one kidney it means that the kidney is not functioning or else that there is an absence of the organ. It has been observed that a testicle is frequently absent along with the absence of a kidney. By estimating the freezing points of the two specimens we can determine whether or not the proper amount of nitrogen is eliminated by each kidney.

There is a special apparatus devised for this purpose and is called a cyroscope. On careful examination of both specimens we invariably find albumen and tube casts from both kidneys in chronic nephritis. Blood and pus indicate pyelo-nephritis or some inflammatory condition. This is a very important point to decide if an operation is anticipated. If pus comes from one kidney and the other is found to be normal, then an operation is justifiable. If on the other hand, both kidneys are found diseased, no surgical procedure should be thought of, and especially if the trouble is tubercular in origin. A bacteriological examination of the sediment will often reveal the cause of the trouble, whether tubercular, gonorrhoeal, or due to other pyogenic microorganisms.

We have briefly gone over the main uses of the cystoscope and the catheterizing outfit. To go into details would take up more than my allotted time for this paper, but we hope what has been said will stimulate a more thorough investigation in this important branch of medicine.

Epilepsy—A Clinical Study.*

By J. Thomas Wright, M. D., Winston-Salem, North Carolina.

The great antiquity of Epilepsy, described under different appellations, and ascribed to different causes, is too well known to admit of discussion. In its treatment, every remedial measure has been tried, from the charms and incantations of the Ancients, through the maze of empiricism, down to the tentative operative measures of the present day, and all have proven, more or less, unsatisfactory and indicate that there is yet much to learn.

Of the different forms or types of Epilepsy, we are well acquainted, but their etiology is still enveloped in a mist which leaves much to be desired. The more recent authors are beginning to recognize the great importance, as etiological factors, of auto-intoxication, auto-infection and auto-toxæmia, not only in Epilepsy but in a great many of the diseases of the nervous system and mental diseases.

We are beginning to learn that many conditions, formerly recognized and treated as distinct diseases, are merely symptoms of a faulty metabolism or of some remote disease. While within the last few years we have learned much of the nature and functions of the internal secretions and of the nervous mechanism controlling them, we still have a great deal before us to explore, investigate and learn. We are far from knowing all concerning the human body and its workings, and, along some lines, are still groping in the dark endeavoring to catch one ray of the sunlight of truth. Modern methods of clinical diagnosis—both chemical and microscopical, have taught us many new facts and have entirely changed the treatment of a number of diseases, and thrown much light on their etiology; and we may hope that within a few years we will have a more perfect knowledge of the diseases which are now so little understood and be more able to cope with them intelligently and scientifically.

While there may be, and usually is, an hereditary neuropathic tendency, save in traumatic Epilepsy, in the individual, yet, according to Hirt, this does not of itself suffice to make an otherwise healthy individual an Epileptic. There must be Irritation—either *direct*, *indirect* or *reflex*. Therefore Epilepsy may be looked upon as a periodical explosion of nerve force, due to irritation in some form—mechanical, chemical, bacteriological, metabolic, psychical, or otherwise. As an evidence of Epilepsy being produced by direct irrita-

cohol as well as by traumatism of the brain. According to the author above quoted, antipyrin, under certain circumstances, has been known to produce an attack of Epilepsy, while several other drugs have the same faculty. One attack, or seizure, predisposes to another, and the Epileptic habit may be quickly formed in an individual with an unstable, nervous system. Once again, I may instance that produced by Alcohol. It is interesting to note that an Epileptic is usually free from his seizures while suffering with certain other maladies, such as pneumonia or typhoid fever, etc. Why is this? Sometimes Epilepsy may be a remote result of the infectious diseases of childhood, and again shock may be an exciting cause. Workers in lead suffer frequently from Epilepsy. Syphilis is a *causative* factor. As before stated, auto-intoxication from ptomaines and leucomaines due to faulty digestion and overeating, with imperfect elimination, should be carefully considered. There is, in an Epileptic, always a hypersensitive brain, or an abnormal excitability of the psychomotor centres, and perhaps imperfect nutrition of the nerve and brain cells. Most authorities agree, I believe, that the subcortical ganglia, as well as the cortex of the brain, are the parts principally concerned in Epilepsy. Numerous and interesting experiments have been made which seemingly confirm this theory, though formerly the medulla and pons were given precedence. The sympathetic nervous system plays a prominent role in this affection as instanced by the vaso-motor changes, relaxation of the sphincters, the pupil, etc. Neurotomy of the sympathetic, according to Von Jaksch, produced a cessation of the attacks for a long time in several cases. The *cause* of the irritation should be sought out in each individual case, if possible. Upon close study, it will be found that no two cases of Epilepsy are just alike, for each case presents its own individual peculiarities. The *auræ* are classified as somatic and psychical. The somatic *auræ* are motor, sensory and vaso-motor. Twitching of the muscles in any part of the body, difficult respiration, palpitation of the heart, etc., are varieties, of motor *auræ*. Among the sensory *auræ* are ascending numbness in the hands or feet, tingling sensations in the same, odors, etc. In vaso-motor *auræ* there may be either pallor and coldness of the hands and feet, with general chilliness, or a flushing of the face and body with sweating. There may be, and usually are, combinations of all the somatic *auræ*. In psychical *auræ* the patient usually becomes restless, excited and bewildered, though sometimes the opposite

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

condition supervenes and the patient is abnormally quiet. There may be vertigo and headache, wide staring eyes, a look of fear or anxiety, followed shortly by a sharp cry, or a groan, as the patient falls with the convulsion. Hallucinations of any of the five senses may occur just before the attack, thus: sounds of various kinds are sometimes heard by the patient, peculiar or unpleasant tastes are present, or total blindness takes place, and so on.

Whether the auræ be of central or peripheral origin has not been settled definitely, though the preponderance of evidence is in favor of the first named.

Of the classical attack of "Grand Mal" every physician is familiar, and I shall therefore confine myself to mentioning some salient, or special features of it which, in my opinion, are of peculiar importance. These are the increased activity of the salivary glands, the involuntary voiding of the urine, fæces, and sometimes of the semen, and profuse sweating—all expulsive efforts of Nature—as if she called into play all the excretory organs and glands of the body for a specific purpose. Again, remember the irregularity of the attacks—especially if purgatives are used as eliminants, or sedatives to dull and benumb the nerves.

This seems to me to point directly to some cumulative poison in the system, which may be due to deficient excretory or eliminative organs, or possibly to an erratic metabolism with, perhaps, an overproduction of nervous force. It will be remembered that over-eating, restless activity, hypersensitiveness, and onanism are common, and almost constant symptoms of Epilepsy. What relationship the sexual organs bear toward Epilepsy—to what extent the influence is, either pro or con, is not clearly understood, but it is generally conceded that the relationship is close, and there is, in most cases of males, a hypersecretion of testical fluid. That recalls to mind one case which I treated several years ago, more or less unsuccessfully, and which was cured spontaneously upon the patient marrying some time later. This may have been a coincidence, but I hardly think so. The effect of the secretion of the ductless glands upon the body and its functions, with the exception of one or two, is, as before mentioned, unknown, and is a fine field for study under the domain of experimental medicine. Sometimes the patient vomits more or less severely after an epileptic seizure, due, no doubt, to hypersecretion of the glands of the stomach, as well as to reflex action due to irritation of the centre of vomiting.

Of the milder form of Epilepsy, or

"Petit Mal," of which Charcot was so great a student, I shall not mention, save that because of its different phases, or variations, especially from a psychological aspect, it is very interesting.

The effect of Epilepsy on the patient's mentality depends to a great extent upon the frequency and severity of the attacks, and the length of time the patient has been affected. Patients attacked in youth or early childhood, suffering most. However, the fact that a person has Epilepsy does not necessarily prevent the development of a brilliant, though perhaps an erratic mind. The oft-quoted cases of Cæsar, Alexander, Napoleon and others, are given as examples. Sometimes though, the unfortunate patient degenerates into a condition bordering on idiocy. The disposition usually suffers much and the patient becomes peevish, suspicious, over-bearing and unsociable. The reason of his moodiness and unsociability is, as a rule, due to the fact that he is branded with the stigma of "Fits"—and perhaps unkind allusions made as to his condition. Also he usually recognizes keenly his almost hopeless condition, and the mere act of living becomes a burden to him. Some very interesting mental symptoms are associated with some cases of Epilepsy, involving the question of double consciousness, and legal, or moral, responsibility, but they cannot be discussed in a paper of this brevity.

Of the treatment of Epilepsy there is not much to be said. It has thus far been almost totally symptomatic, and without appreciable results.

All the drugs familiar to medical men have been used, and a great many materials that are not drugs. The French and German authorities claim good, and sometimes brilliant results, from Hypnotism and Suggestion; but aside from the correcting of bad habits, and its disciplinary or moral effect, I have seen no permanently beneficial results from it, personally, either in my own cases or in those of others. Yet it is a potent remedy in skilled hands and needs further investigation and study. In one case, a young man who had had Epileptic Seizures from infancy, by correcting diet, and as far as possible other vicious habits, and using purgatives and other eliminants, I was able to ward off attacks from three (3) to five (5) months, which had previously occurred from one to three times per week, by the use of oft-repeated hypnotic suggestion. The patient's body should be examined carefully, including its natural orifices, for any abnormality, or evidence of injury, or for the location of possible foreign bodies. When such conditions, or causes, are found they

should be treated, and, if possible, removed. Circumcision, the removal of urethral caruncles, dilatation of the sphincter ani, excision of cicatrices, and other operations of a corrective nature prove of vast benefit, when indicated, and often cure. I have in mind the case of a lady in whom a stigmatism, with consequent eyestrain, produced a number of the phenomena of "Petit Mal," and who recovered absolutely without medication upon having the eyes fitted with suitable glasses.

In cases of Jacksonian Epilepsy, of course trephining is the remedy. The stomach tube is often useful in cases complicated with indigestion and nearly all are, and likewise cleansing and laxative enemata are of great benefit. Nitrogenous foods, and condiments should be avoided and the patient should live on fruits and vegetables as much as possible. Of course alcoholics are interdicted, and coffee or tea should be used but sparingly, if at all. The bowels at all times should be kept freely open and the whole glandular system active.

Cresote, Salol, and Naphthol are used with a view of counteracting intestinal sepsis, while trional, chlorotone, hyoscine, valerian, the bromides, acet anilid, and other of the newer synthetic compounds, have been used to quiet the nervous system. Oxide of zinc has also been much lauded by Herpin. Borax has also been used. The bromides, however, are still given the precedence. Personally, I prefer the sodium salt, given alone or in combination with *passiflora incarnata* and gentian. Hirt strongly recommends the administration of belladonna with the bromides to increase their efficiency. Exercise in the form of gymnastics, or some manual labor, should be insisted upon and excess of any kind prohibited. "Be temperate in all things" applies especially to the Epileptic. I shall append a report of two cases which I have not previously mentioned in this paper.

Case I—Young married man aged twenty (20), printer by trade, given to alcoholic excesses, had Epilepsy for three (3) years. General condition fair with the exception of marked nervousness. First attack came on during a severe intoxication and had persisted in returning at irregular intervals. Convulsions quite severe and always left patient much exhausted for several days. Upon examination, found right kidney sensitive, irritable stomach, loss of appetite and quite a nervous heart. There was polyuria, and the specific gravity of the urine was low. Diagnosed Epilepsy, due to alcoholism. Treatment consisted in the removal of the cause—the

whiskey, tonics, purgatives, Bromide of Soda, with valerian and *passiflora incarnata*, and directions as to habits and diet, with baths. I also used suggestion, more or less, throughout the treatment. The attacks returned at longer and longer intervals, until they ceased altogether, at least they had not returned for over a year, when I last saw him.

Case Two.—This was a gentleman of color, who said he had "fits" for five or six years. He had some eruption on the skin, indigestion, foul tongue, constipation, dilated pupils, loss of muscular force, and mind much confused. Gave a history of syphilis which had been imperfectly treated. The seizures occurred on an average three times per week, and at times he would have entire lapse of memory for days at a time. Under specific treatment, coupled with purgatives, the bromides, tonics, and restricted diet, this patient also made a good recovery after several months.

In the only case of Status Epilepticus which I ever saw, the young woman had thirty (30) convulsions in twenty-eight (28) hours, when death supervened. Notwithstanding inhalations of chloroform, opiates, and other active treatment, the convulsions continued to the end.

Some Observations Anent Malaria With Special Reference to the Disease as Complicating Enteric Fever.*

By A. S. Pendleton, M. D., Henderson, N. C.

The conclusions arrived at and set forth in this paper are the result of a careful revision and study of 943 cases of malaria of which complete notes were taken and of conversation with medical men living in malarial districts who have had a large experience with the disease.

Of the cases 12 were of the malignant type, with hemorrhages and subsequent jaundice, 97 æstivo autumnal remittent, 79 quotidian intermittent and the remainder tertian intermittent. The apparent proportion would be misleading did I not add that, as no record was kept of a great many cases of the tertian variety treated during the same period they are not included.

In the malignant cases the blood was found filled with molecular debris and disintegrating red-blood cells and contained numerous small organisms identical in appearance with those seen in the beginning of the æstivo-autumnal type of the disease. The plasma was apparently slightly stained with hæmoglobin. From the course taken by these cases, and, according to the ex-

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perience of men who have treated many similar ones, the danger in malignant malaria is practically never due to the loss of blood through hemorrhage, but to the toxins in the circulation causing an acute nephritis—death resulting from ureamia. The fact that the physicians who obtain the best results in its treatment are those who pay most attention to the kidneys will strengthen the position here taken.

It is very unusual for the hemorrhage to threaten life. Almost invariably the amount of blood lost seems to bear no relation to the gravity of the attack. In one of the cases cited the hemorrhages were very profuse and continued throughout forty-eight hours, yet the patient recovered, though at times no radial pulse could be detected.

In another, the hemorrhages were limited to two and were both slight; yet on the third day there was complete suppression, the patient dying on the eight from uramia, though all known means, including hypodermoclysis, were tried to get the kidneys to act.

The use of the deci-normal salt solution by transfusion, hypodermoclysis, or enteroclysis has undoubtedly materially lowered the mortality, and should be used in every case, regardless of the amount of hemorrhage; its beneficent action being derived much more largely from its direct diuretic effect and from diluting the toxins in the circulation and so preventing nephritis than from replacing blood lost. Nausea with frequent wrenching and vomiting is almost always present during the first twenty-four hours, and it is a waste of time and energy to give anything by the mouth except calomel, champagne, a little water or cracked ice. A hypodermic of morphine is usually necessary for pain and nausea.

Quinine should be administered hypodermically and, as twenty to thirty grains per diem have been proven sufficient to destroy the organisms, the dose should be limited to that amount. The reasons the immense doses of the drug which have been given have done no harm or have apparently done good is because only a very small proportion was given hypodermically and that given per ore was either vomited or swept through the alimentary tract by the accompanying calomel before there was time for absorption. Diuretics per ore should be begun as soon as possible.

Nothing of interest was noticed in connection with the Tertian and æstivo-autumnal types except that the salicylate of quinine was better borne by the stomach than any other salt, that it controlled the

headache and backache usually without the need for coal tar products or morphine, and that a smaller dose of it was required, than of the sulphate, to destroy the parasites. Fifteen to twenty grains per diem generally being sufficient. As to the etiology of the disease, we are all agreed that it is caused by the presence in the blood of the malarial parasite, variously known as hæmosporidia of malarial, plasmodium malaria, etc., which have been very fully described by many of the authorities, but especially by Thayer, of Baltimore. Manson holds to the belief that the only cause of infection is through the bite of the anopheles mosquito and his experiments would lead us to believe that his conclusion is the correct one, but we of the South and especially those of us who live in the eastern section of North Carolina, have learned through experience that certain conditions certainly predispose to the extent of determining individual attacks whether or not they are responsible for the infection. For instance, those who habitually drink impure water are peculiarly liable to the disease while those who are careful to take nothing but pure water are notoriously free from attacks. The substitution of deep drilled wells for shallow open ones has greatly lessened malaria in certain districts. Those who are exposed to the heat of the noon-day sun are more often attacked than those who are not. In intensely malarial districts a paroxysm will often make its appearance after surgical operation or after labor, and one too that is shown to be malarial and not septic in origin by examination of the blood and the administration of quinine. These facts indicate the possibility of other sources of infection. On the other hand the writer has found the organisms in the blood though there were no symptoms indicating their presence and the conditions just enumerated may act by simply lowering the vitality and resistive power of the individual to the extent of causing an attack when otherwise the parasites would have been destroyed without producing symptoms. That exposure to night air predisposes is explained by the fact that the anopheles is essentially a night hawk.

The number of cases is always increased in localities where excavations are being made, where the ditching and draining of swampy lands is being done, but there is less than usual during the summer following such drainage. Malaria is more prevalent in dry than in wet summers, this may be because stagnant water is required for the growth and development of the larvæ of the anopheles and oft repeated rains destroy them.

Let us now consider malaria as a complication of typhoid. All authorities I believe admit the possibility of such a mixed infection, but declare it to be a very rare condition.

In the summer and fall of 1899 the writer treated twenty-seven cases which presented the following evidence of being caused by a mixed infection.

1. The plasmodium in one or another of its forms was present in the blood of all, so there was no doubt about the malaria.
2. Widal test positive in all.
3. The Diazo-Reaction was present in all.
4. Exsistaxis in seventeen.
5. Rose rash in twenty-one.
6. Intestinal hemorrhage in five.
7. Perforation of bowel with death followed by post mortem in one.

As you will see, I have taken only those cases in which the proof was practically indisputable and when I add that the total number of typhoid cases, including these, treated during this time was 39, you will perhaps begin to believe with me that in malarial sections the mixed infection is much more common than we have been taught to believe.

In these cases during the first few days of the attack the malarial symptoms were of such prominence as to mask those of the Enteric; but after the first week, when sufficient quinine had been given, the clinical course was typically typhoid in character.

The usual history was as follows:

No prodromes, the disease being ushered in with a chill accompanied by headache, backache, and a maximum temperature of from 104 deg. to 105 deg. F. sometimes reaching 106 deg. F. The bowels generally constipated and the tongue pale, flabby, and heavily coated.

The urine usually showed a trace of albumin and in some cases particularly those in which the temperature was excessively high, an occasional blood cast was found. Examination of the blood on the afternoon of the second day revealed numerous malarial parasites.

From three to six hours after the chill the fever would begin to subside and the patient to sweat profusely. The temperature would almost or quite reach the normal by the morning of the second day and rise again to about 100½ deg. F. in the evening.

In about fifty per cent. of cases observed there was a second chill with fever and sweat on the third day, regardless of the treatment instituted, but when fifteen to twenty grains of quinine were administered daily the third paroxysm never ap-

peared. Discontinuing the quinine invariably means a recurrence of the chill and usually on the eighth day. Fifteen to twenty grains was found to be sufficient to control the malarial element and seemed to have no deleterious effect on the typhoid.

The course of the disease after the third or fourth day was generally typically typhoid when the quinine was continuously administered.

In five cases there were one or more hemorrhages, and in one perforation followed by death of the patient. Another was complicated by broncho-pneumonia in the third week and the patient succumbed on the twenty-sixth day, making two deaths and twenty-five recoveries. It would seem therefore, that the mortality is no greater than in uncomplicated typhoid.

The reappearance of the malaria when the quinine was discontinued was probably due to reinfection as these patients were not protected.

The purpose of reading this paper is to get those of you who have had a large experience with malaria to express your opinions without reserve rather than with the idea of presenting anything new.

TO RECAPITULATE.

1. The use of the decinormal salt solution is indicated in every case of malignant malarial, regardless of the amount of hemorrhage for its diuretic action and to dilute the poison in the blood. Not more than 20 to 30 grains of quinine per diem should be given and that hypodermically. No drug save calomel should be administered per os during the first 24 hours.

2. The salicylate of quinine is the salt of election when the drug is to be used by the mouth. It being less irritating to the stomach, causing less tinnitus and a smaller amount being required to destroy the parasites.

3. Have we discovered in the anopheles mosquito the only source of infection?

4. It would seem that in malarial districts enteric fever is more often complicated by malaria than we have been taught to believe, though this mixed infection does not apparently increase the death rate provided the malaria is taken into consideration and treated.

The Diagnosis and Treatment of Some Fractures Often Seen in Private Practice.*

By Dr. F. H. Russell, Wilmington, N. C., Exam'r in Surgery North Carolina State Board Medical Examiners.

To the general practitioner fractures come under the head of imperative surgery;

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

the careful diagnosis and treatment is of the utmost importance, without which the patient will probably have a deformed limb, partial loss of function, pain and ill will towards his physician which may make itself manifest in the form of a damage suit. In all fractures it is well to give a guarded prognosis, explaining the possibility of some deformity or shortening on the ground that it is impossible to tell how severely the bone is injured. Fractures are one of the most frequent injuries we are called upon to treat, if not the most frequent. They have been known to occur in the infant in utero, from a bullet or sharp instrument which has perforated the mother's abdomen or violent blows on abdomen.

It occasionally happens that a limb is fractured during delivery, from rough manipulation or instrumental delivery and so on through all stages of life; the climbing boy and Tom Boy until we come to the fragile and easily fractured bones of old age, which furnish the largest number of fractures.

We are all familiar with the usual symptoms of fractures, but like many other troubles in medicine and surgery the case we are called upon to treat is not like the one in the book which seems so plain—in fact often nearly all of the symptoms are absent.

1st. The deformity may be so slight, that only very careful palpation and comparison with the normal side and movements will detect it.

2nd. Measurement is not always certain. Strinsson lays special stress on the normal asymmetry of the body which is sometimes very noticeable, as much as an inch and a half in the lower limbs, swelling of the soft parts which also occurs in sprains and bruises is another source of difficulty.

3rd. Our usual sign of abnormal mobility is not always present and recognizable for the fracture may be incomplete or near a joint or one fragment may be too small to be grasped—the elasticity of certain bones as the ribs and fibula may mislead you.

4th. Crepitus—This important sign cannot always be produced, if the fragments are completely separated or if a piece of fascia or muscle is between them or if they have become covered with granulations. It is a noticeable fact that the manipulation which produces it one moment does not cause it next.

5th. Loss of function is only a suggestive symptom—as any severe pain in foot will cause it—again patients are occasionally seen who can move a fractured limb or even walk with a broken ankle or leg.

6th. Pain is not a positive sign, as it may be present from as many other causes.

Strinsson says its absence is often a positive means of excluding fractures.

7th. History—This is often difficult to get satisfactorily as often only the injured knows of it—determine if there has been previous injuries which might deform the part, nature of accident, force caused it, position patient was in at time, etc.

The diagnosis of fracture is not always a simple matter, often in children, sometimes in grown people fright and pain with excessive muscular rigidity will prevent a thorough examination and general anæsthesia should be used. In my opinion this valuable aid to diagnosis is not used often enough. Too often the fracture is done up with a slight examination. Under chloroform a careful examination can be made and great benefit derived from the study of the case and many times we will find what we did not even suspect.

In many cases the doctor does not arrive in several hours after the accident, as cases in the country where the doctor does not worry about the other man getting his case, then the pain and swelling is at its height and the diagnosis is difficult.

In every case where there is the slightest doubt use chloroform, having the dressings ready to apply as soon as the examination is made.

As a rule fractures unite readily, the younger the child the better. In adults and old people about the same length of time is required, but after the fracture unites the patient is not always well, the soft parts have suffered from the disuse of the limb and from retarded circulation caused by the dressings, the skin is sensitive and dry, the limb swells, the joints are stiff. Massage with some oil or cocoa butter hot water poured over part often, and working the part under hot water usually restores things to normal in a few weeks.

Fracture of Clavicle.—This is a very frequent injury in children, in adults the same force causes dislocation of the shoulder joint. The outer portion of middle one-third is usual seat and simple complete fracture the usual form, although incomplete fracture often occurs.

We are often called to a child who has had a fall on shoulder. Examination reveals only a bruise with swelling and pain, the clavicle seems to be all right, but later a lump of callous can be felt under clavicle, showing the real nature of the injury.

Fractures of the middle one-third are easily recognized as the usual signs are easily made out. Outer and inner thirds not so easily diagnosed, deformity is less, crepitus hard to produce pain on pressure when the shoulder is pressed in, partial fracture or fracture without displacement,

it may be about the only sign present—slight displacement and shortening usually results.

In complete fracture the weight of the shoulder causes displacement of the fragments. The principal point in treatment is to put the shoulder in proper position and keep it there; many different dressings are used, every man has his favorite. Sayres adhesive plaster dressing seems to hold the parts in position and gives good results. A very good dressing is a pad over clavicle held by plaster, a sling for arm and plaster over shoulder and across back to hold shoulder in good position.

Rarely a patient will want to prevent all deformity, usually a young lady, and she may be treated by lying in bed for three weeks with a firm pad under shoulders, arm held across body, or by digital pressure on fragments.

Colles Fracture.—Fracture near the wrist joint looks very much like a dislocation backward for which it was taken by our forefathers. By many this is considered the most frequent fracture. The ordinary symptoms of crepitus and mobility are often absent and the diagnosis is difficult. It often has to be made upon the following signs: Tenderness on pressure, deepening of the transverse folds on front of wrist, deformity and loss of function of hand.

In this fracture we should give chloroform if reduction is not easy, unless perfectly reduced deformity results, the hand should be moved backward and forward to loosen the fragments, then pressed in place, after once it is reduced it usually stays. Many splints have been devised for this fracture, but the best is the old Ant. and Post. wood splint anterior coming to meta carpo, phalangeal joint, post to carpo, meta carpal joint, with something in hand to support it, and elevate a little, the splints are firmly bound on. Plaster of Paris also makes a good splint. A wide strip of adhesive plaster drawn tight around the fracture has been used.

In elderly people motion is restricted at the wrist joint, the fingers are stiff and pain on motion persists for months due to injury of soft parts and inflammation of sheath of tendons.

Fracture of lower end of humerus named according to seat of fracture, ext. or Int. condyle, inter condyloid and articular process.

Occurs frequently in children, parts swell rapidly here, and it is important to make diagnosis as early as possible as the function of the elbow joint is easily interfered with by a displaced fragment or too much callous.

As to the signs, pains on pressure, the

location of the pain being valuable evidence as to the position of fracture, the other symptoms are usually present. Dislocation of the elbow often resembles fracture of lower end of humerus by careful manipulation we can feel the head of the radius in place and the olecranon process bearing its proper relation to end of humerus.

The positive sign of fracture of either condyle is its independent mobility noticed by grasping it and moving backward and forward, in inter condyloid pain is present when the two condyles are pressed together.

Treatment.—The arm should be put up with elbow at a right angle, anterior and posterior moulded splints from any splint material. Plaster of Paris a good dressing. The fore-arm should be supported in a sling from the wrist.

Fractures of upper end in most cases we find the usual symptoms of fractures in some cases with great swelling, pain on pressing the fragments together may be the only symptoms on which to make a diagnosis.

Dislocation of shoulder is excluded by recognition of head in its proper place.

Fracture of Ribs.—This is of frequent occurrence, may be partial or complete, includes one or several ribs, from the 5th to 9th are the ribs most frequently broken; the floating ribs are never fractured. If only one rib is broken, little displacement will result.

Symptoms are pain on pressure—or deep inspiration and coughing, crepitus often heard by placing ear against chest—bloody expectoration frequent—the presence of erythysenia with absence of external wound is said to be pathognomonic.

Treatment.—Partial immobilization of chest by wide strip of adhesive plaster placed around one-half of chest during expiration.

I wish to call special attention to the treatment of certain fractures of the lower extremity with the old Nathan R. Smith anterior splint. In fractures of the neck of the femur—whether they be intra or extra capsular, in all fractures of the shaft—fractures of the neck are usually found in the aged—the tissues being lowered in vitality they stand the long confinement poorly, the usual apparatus requires the patient to stay practically in one position for several weeks, the general health suffers so from this, that the fracture is often unable to unite. The apparatus consists of a post 6 feet high at the head of the bed, one at the foot, securely fastened to the floor with a connecting piece above; pulleys are fastened in top piece to elevate and lower the limb, in the

post at foot to make extension. The wire frame to cover anterior portion of limb from hip to foot, this is snugly bandaged to limb and when elevated by means of pulleys above, the pressure of splint is taken off and makes practically a soft comfortable sling for limb. The patient can sit up in bed—use the bed pan with ease, the back can be spunged—bed sores prevented, the limb can be lowered and raised, helping the circulation and adding greatly to the comfort of patient.

Report of Case.—Mrs. S., age 70, was coming out of church on Sunday evening, last July, slipped and fell down two steps, had to be carried home. On examination found her unable to move limb, foot everted, limb lying helpless on bed, pain in hip on pressure, limb shorter; diagnosis, fracture of neck of femur. The limb was put up in R. R. Smith's anterior splint. By means of a strap fastened to the piece above the bed, patient was able to pull up, change her position in bed, etc., she stood the confinement well, notwithstanding the intense heat, at the end of 7 weeks dressing was removed and massage given for two weeks; after this, she was able to go around with the aid of a stick and had a fairly useful limb.

Case II.—Mr. G., white, age 62, had a large door to fall on right thigh, fracturing the shaft in two places; an anæsthetic was given, fracture reduced, a perforated zinc splint placed around limb, and Smith's anterior splint put over this; patient stood the confinement well, in 6 weeks union was good, with very little shortening.

I have used it in five other cases, always with comfort and good results to patient.

The Care of the Tuberculous and the Importance of Intelligent Legislation and Education as Factors in the Prevention and Cure of Tuberculosis.

By Thos. P. Cheesborough, M. D., Asheville, North Carolina.

I shall write just about the early diagnosis and certain signs which, when first observed, should make us suspect tuberculosis, for all of us recognize the great importance of an early diagnosis in consumption. Latham, in his most excellent book, "Diagnosis and Modern Treatment of Pulmonary Consumption," says that we must make a positive diagnosis of this trouble.

First. When Tubercle Bacilli are found in the sputum and there is no source found for them in the mouth and upper respiratory passages.

Second. When Hæmoptysis—even to a

very small extent—is seen associated with suspicious physical signs and when we are sure that the bleeding does not come from upper air passages.

Third. When we find diminished resonance and increased resistance to the finger in percussion, associated with the presence of persistent crepitation and rales in those situations where tuberculosis usually starts. If these signs above mentioned are carefully looked for by all general practitioners we would expect cures in nearly all cases of tuberculosis. But they are not. Like all physicians living in a country celebrated for its climatic advantages, it has been my lot to come in contact with a vast number of these unfortunates, and nearly all of them have passed the so-called first stages of the disease. In fact nearly all the tuberculous who come to Asheville have delayed so long in coming, either from lack of diagnostic ability on the part of their home physician or his unwillingness to tell them of their serious trouble (or to lose a patient) that it does not require an expert to diagnose tuberculosis. An intelligent cab driver or car conductor can do it, and it is with this class of consumptives that we chiefly have to deal, and of whom I am writing.

One of the greatest disadvantages that I have found in treating this disease is that the poor unfortunate, when at last his disease has been diagnosed, and he has been sent from home and its comforts, has been advised by the home physician not to consult any one here, but to exercise and drink whiskey and to come home in a few months cured. These things he does until finally, after having wasted much time and having steadily grown worse, he consults us and we find that he is running a high temperature and has a disordered digestion and all the evils that accompany them. We have first to convince him that he has been pursuing the wrong course, that rest—absolute rest—is of the greatest importance and *fresh air* all the time, night and day. From his infancy he has been taught to fear God's beautiful fresh air, that never yet has done any one harm, taught to shut it out from his house and to live in close, stuffy, overheated rooms. When at last we have persuaded him to sleep out and to live out in the open air, he begins to get better, but still coughs and raises. They want this stopped, and if you are not careful you will find that they are taking some cough remedy that they brought with them, a cough medicine full of some sedative that ties up the secretion and prevents drainage, and drainage is what they want. Drainage to clean out the accumulated mucus, pus and bacilli, and if we do not get drainage we

*Read before the recent meeting of the North Carolina Medical Society, at Raleigh.

will soon have chills, fever and sweats, and with these our patient grows steadily worse. I find it very difficult, but very important, to teach them that they must cough in order to get rid of the vast amount of mucus, pus, etc., that is always secreted when mucous membranes are inflamed. And night sweats, too, are in my mind, just another manifestation of Nature's efforts to rid the system of poisonous and deleterious products. I do not give drugs to stop night sweats, but try to remove the causes. These are simple little points that years of experience have taught me to respect.

Next to rest in the open air comes nourishment. Do not stuff and overfeed, but make your patient eat all the good, nourishing food that they can possibly digest and assimilate, and all persons suffering with consumption (a good name for them is a consuming going on all the time) require much more food than those who enjoy health.

Instead of cough medicine I find that by carefully clearing the upper air passages by means of antiseptic and alkaline washes in sprays, and deep inhalations of some of the soothing oily substances in sprays and depurators. That we soon make them raise easily, and by thus getting rid of the offending matter, there will be no necessity for much coughing. The so-called useless cough usually comes from an inflamed larynx and this must be treated accordingly. After the patient has ceased to run a temperature and has regained his lost weight, or in other words, the active tubercular process has become arrested, then we should allow him to exercise, or in other words, to live a healthful, normal life.

In regard to legislation as a means of prevention and cure, I realize that it will take time to accomplish much, but good can be accomplished at once. While the refined, wealthy and educated consumptive expectorates his 500,000,000 tubercle bacilli per day, the same as his poor unfortunate brother, who has not a change of linen, the former—if he be refined and educated—has learned how to destroy his sputum that he almost ceases to be a source of re-infection for himself and infection for others. The latter does not know and expectorates any and everywhere.

First. There should be strict legislation in regard to expectoration.

Second. All large corporations employing large numbers of laborers should be compelled to have their employees examined whenever there is the slightest signs of pulmonary trouble; and when the disease is present, either the corporation, town, State, or United States government

should remove that patient to a suitable place and support him or her until cured. Every hotel and boarding house in our State should be compelled to have certificates from a competent health officer that all of its rooms in his house have been thoroughly disinfected after being occupied by any ill person.

North Carolina should not allow a sleeping car to pass through her borders without such a certificate; and right here I wish to say that the sleeping cars are a very prolific source of spreading all kinds of infection. I have seen the poor dying consumptive, even when accompanied by a physician and trained nurse, expectorate on those horrible colored blankets that most of the sleeping cars use, and on the edges of the berths. What is the result of this? At the end of the journey the patient leaves the car and the sputum that has dried on the blankets and berths is left there for the next occupant to inhale.

All public and private schools should be carefully watched over by the health officer and the children taught how to take care of themselves, and not to expectorate promiscuously.

The officers who should be the sanitary guardians must be men chosen for their ability and not merely from political influence.

To sum up: Let us teach our children at home and in schools how to live. Let it be compulsory for every one of them to show certificates of good health, just as they now have of vaccination.

Let all employees of large corporations be examined and cared for by their employees, town, State, or United States government, when suffering with tuberculosis, thereby insuring an early diagnosis and cure.

Let all sleeping cars be thoroughly disinfected at the end of each journey.

Let every public building, hotel, boarding house, factory or office, etc., show certificates of disinfection as often as the health officer thinks best.

Let it be a crime to expectorate where the sputum may become a menace to good health.

Let these few simple rules be carried out and in a few years we will accomplish more in the way of curing and preventing the "Great White Plague" than has ever yet been accomplished by all the serums, Toxin, Antitoxin, and drugs in the Pharmacopœia.

Where hysteria is the result of uterine troubles, aletis, cordial Rio, combined with celerina, is an excellent remedy.

Charlotte Medical Journal

EDWARD C. REGISTER, M. D., Editor.

No. 36 SOUTH TRYON STREET, - - -
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THE AMERICAN MEDICAL ASSOCIATION MEETING.

The Atlantic City Session of the American Medical Association, which was held last month, in many respects was one of the most successful ever held in the history of the Association. From a scientific point of view it was equal to any and the attendance was larger than at any former meeting. It has been said that with the exception of one or two International medical meetings this one at Atlantic City was the largest collection of medical men ever known.

Atlantic City is an ideal place for a meeting of this kind. Its hotel facilities are complete—satisfactory in every respect. The several thousand physicians in attendance with many other guests caused no crowding of the hotels. When a physician goes to a meeting of this kind and has great difficulty to secure accommodations, finally after spending hours and hours in looking around for hotel accommodations, has to finally go to a second-class boarding house in order to remain at the meeting, his enthusiasm, in a great measure, is gone. He will speak of that meeting of the American Medical Association as a failure as long as he lives. The Association while it is as large as it is now ought never to meet except in a large city. The facilities in New Orleans a year ago were not sufficient, complaints were heard on every side. Many men left almost at the beginning of the meeting, provoked.

I believe that it is a great mistake for the Association to go to the extreme Northwest to have its next meeting in a small city that can hardly do more than entertain its State Society. The responsibility of taking the Association to Portland rests upon the shoulders of a few. If the meeting is not everything that is expected of it, they alone are responsible. It is very nice to take a trip to Portland over the Rocky Mountains, stop at the Yellowstone Park and return by the Yosemite Valley, and incidentally take in the American Medical Association Meeting. The interests of the Association should never be jeopardized for reasons like this.

The scientific feature of the meeting was everything that could be wished for. It has been stated that every section made a good report and that the work done in all of them was of a very high order. This

success was due to the proper selection of sectional officers. The Association for the last few years, to the writer's knowledge, has not made many mistakes in the selection of these officials. They are energetic, enthusiastic, painstaking workers and they have made the various branches of work in the Association what they are to-day.

PRESIDENT MUSSEY'S ADDRESS.

The President's address was replete with many beautiful and practical ideas, clearly and forcibly expressed. Its author was evidently familiar with the needs of the medical profession of America, the necessity of legislative enactments and the necessity of educational advancement along different lines, and their relation to the American Medical Association. We join him in the belief that we have much cause to congratulate ourselves on the progress which has been made in the organization of the medical profession throughout the country. The physicians in nearly every State have become quickly and thoroughly and satisfactorily organized.

His suggestions concerning the Section work of the Association and the organization of a special International congress have important possibilities. He dwelt at considerable length on the position of the profession in relation to the public and sanitary science.

The greater part of his address was devoted to medical education. This subject is always full of interest and importance. For several years Dr. Mussey's predecessors in office have discussed this subject in all of its phases. The leaders of the Association have given a great deal of attention in the last few years to higher medical education and its ideals have been practically attained in a great many States and sections, yet our production of medical men has been far in excess of the demand for them. There is no doubt in the writers opinion that Dr. Mussey's idea is correct that the importance of preliminary educational requirements for medical students have been neglected—not enough attention has been paid to this part of the subject. Here is the place to eliminate many young men who enter the profession unprepared and fill its ranks when there is no necessity for it. It is common knowledge that a medical man, really any professional man, should be thoroughly educated technically, but there is a doubt and a good reason for a doubt, that it is practical, certainly it is difficult, to thoroughly educate a young man technically unless he has received a first-class literary training. Until we have some uniform regulation as to preliminary educational requirements for

young men before they begin the study of medicine this problem of higher medical education will never be practically solved. We are glad to notice that Dr. Musser has laid great stress upon this idea. We believe that an educational requirement—the equivalent of that for which a first-class college degree stands—may not be immediately practical, but we should work for a plan that will enable us to see in effect this high ideal. It will not take many years if we keep this constantly in mind, with a constant desire to work to it, before it can be attained. It does not take a close observer to see that a medical man who commenced the study of medicine with a preliminary general education equivalent to a college degree stands, as a rule, almost a universal rule, at the head of his profession.

The Committee on organization recommended that all the State Societies meet in the fall of the year. We suppose that this matter will be forced upon the North Carolina Medical Society for consideration some time in the future. If we have nothing to consider except what will benefit the American Medical Association this suggestion ought to prevail. We always get in line when progress is in sight, we follow when it is wise and manly to do so, and we do not when we have other convictions. We all love this great National Medical Society of ours and we stand ready and willing to help build it up and maintain it. This feeling is in us all, but any measure or any policy presented to us, regardless of its source, which will interfere with the growth and usefulness of the North Carolina Medical Society will receive only a passing notice. It will hurt the North Carolina Medical Society to change its time of meeting from the spring to the fall. Many good reasons can be given for this belief, but it is not necessary to mention them here. It may be improper for me to add that the Doctors in this State, especially those whose opinions are worth the most in medical matters, are not willing for their confreres in Chicago to give them too many specific directions about how to manage their own affairs here at home.

NEW OFFICERS.

The following were elected officers of the Association for the coming year: President, Dr. Lewis S. McMurtry, Louisville, Ky.; Vice-Presidents, Drs. J. H. Bell, Texas; Edward Jackson, Colorado; F. C. Shattuck, Massachusetts; B. F. Pennington, New Jersey; Secretary, Dr. G. H. Simmons, Chicago, Ill.; Treasurer, Dr. Frank Billings, Chicago, Ill. Members of the Board of Trustees for three years: Drs.

T. J. Happel, Tennessee; W. W. Grant, Colorado; Philip Marvel, New Jersey.

Addresses at the general meetings next year will be as follows: General medicine, by Dr. Chas. Stockton, of Buffalo; Surgery, by Dr. John Collins Warren, of Boston; State Medicine, by Dr. George Brannan.

TYPHOID FEVER AND THE HOUSE FLY.

The season of the year is upon us when the common house fly becomes a myriad host. With typhoid fever prevailing in so many sections as it has occurred during the past year there is reason to call attention to the possibilities and probabilities of the common house fly acting as the carrier of the bacilli of typhoid.

This mode of conveyance of the typhoid bacilli from those sick of the disease, or from excretions of such persons to fruit, vegetables and other articles to be used as food by healthy persons, is well known, but not sufficiently observed by the mass of the profession in the every day care of the typhoid sick. Kuster, in his studies observed that flies are known to carry typhoid, cholera, anthrax and plague bacilli as well as other pyogenic cocci. The bacteria may be carried either on the surface of the insect or in its intestinal tract, when they are deposited in the feces of the fly.

Fischer,² has particularly studied the length of life of the typhoid bacilli in or on the bodies of the flies. He found that flies fed with typhoid bacilli were able to convey the microbe to objects with which they came in contact twenty-three days after feeding.

Alice Hamilton,³ in an exhaustive and well worked out paper, shows how seriously the house fly figured in a serious epidemic of typhoid fever in a number of wards in Chicago in the summer months of 1902. Flies were caught in two undrained privies, on the fence of two yards, on the walls of two houses and in the room of a typhoid patient and were used to inoculate 18 tubes, and from five of these tubes the typhoid bacilli was isolated.

During the Spanish-American war the common house fly was the recognized carrier of the typhoid bacilli, contributing largely to the spread of typhoid fever among the U. S. troops in camp.

What every physician, every nurse in typhoid fever cases, and every responsible person under the circumstances by duty need to do is to see that the excretions of

1. Kuster, Archives f. Hygiene, 1903. Progressive Medicine, March, 1904.

2. Centralblatt. f Bacteriology, 1903.

3. Alice Hamilton, Jour. Amer. Med. Ass'n., Feb. 28, 1903.

all kinds, from the patient as far as possible, are sterilized and every effort and means be used to prevent the entrance of flies to the sick room or where are any unsterilized excreta or unboiled bedding; and especially is this important where the patient is unconscious or in a delirious condition of mind, where the excretions may be passed in the bed. Wire screens should be used at all windows and doors; and either the common sticky, or poison fly paper may be used to destroy those flies which gain entrance, to prevent their coming in contact with articles of diet of well persons.

When all excretions—stools, urine, expectoration and the clothing in every case are thoroughly sterilized, and flies prevented from coming in contact with excreta and in getting later to material intended for food, after it has been prepared for use, there is every reason that we fore-see the end of this disease, at least its disappearance as an epidemic.

DIABETES IN CHILDHOOD.

This disease occurs so rarely that when it is finally recognized it is found to have existed for some time, having been overlooked and only discovered by the child being suddenly stricken by some inter-current disease.

Too frequently where abnormal urinary conditions exist in childhood there is a failure on the part of the attending physician in making a proper laboratory examination of the urine, at times through the difficulty of obtaining samples of urine, but often by simple neglect in the effort to secure advantage of such diagnostic help.

It is true that where diabetes develops in childhood, there is a serious prognosis presenting, with the stern and inflexible result which is quite positive to occur in six to ten months; no cases of recovery having been reported. And yet it is well for both the attending physician and the parents of the child that the facts become known at the beginning, that no surprises are allowed to occur, from sudden demise, when the true cause of death has not been fully recognized.

The cause of this condition that is most favorably accepted by the largest number of authorities, is that of hereditary influence from parentage of neurotic or gouty type.

Rowell,* after relating the history of two cases, a brother and sister, one dying from exhaustion and coma, the other of bronchitis and coma, continuing, says: "Interest resides in the following family history: The members of the father's side of the family all exhibit neurotic tendencies. The father himself, while apparently free from organic disease, is an unusually nervous, irritable man, and is considered eccentric by his fellows. An uncle

is confined at present in one of our hospitals for the insane. An aunt died recently of goiter and diabetes. The father's father died of chronic alcoholism and the father's mother is alive, but partially mentally unbalanced."

The propriety, in all cases, when there is polyuria or abnormal condition apparent, is that there be a full and careful chemical examination of some samples of urine from the cases. The examinations to be made at different times from fresh samples collected for the purpose.

STERILIZATION OF DRINKING WATER.

Recent news notes coming out from Washington, D. C., chronicled a discovery which, if practical, will prove of the utmost interest and import to the human family.

"Washington, April 10th, 1904.

"Germs of typhoid fever and malaria, together with mosquitos, which are blamed for transmitting the latter, can be eliminated from drinking water, ponds, rivers, lakes and reservoirs by utilizing a combination of chemicals, the cost of which is infinitesimal when compared with the benefits derived from their use."

Continuing, it is explained that the combination of chemicals to be used to serve as the baccilli destroyer is the "Bordeaux solution, which has been used for generations in this country in ridding vegetation of vermin."

This discovery and its development comes, as press notices state, from the Department of Agriculture, under the experiments of Dr. George T. Moore, in charge of the the Laboratory of Plant Industry, who has conducted the experiments.

The Bordeaux mixture, according to the Bureau of Agriculture, is prepared by dissolving in twenty gallons of clear water six pounds of copper sulphate by suspending the copper in a coarse sack just beneath the surface of the water. In another vessel slack four pounds of fresh lime, so as to obtain a smooth, creamy liquid. When the lime is slacked, add sufficient water to make twenty five gallons. When the bluestone is thoroughly dissolved, pour the lime water and bluestone water together, using a separate barrel, stirring constantly to secure a thorough mixture.

Later reports, May 8: The only chemical mentioned is sulphate of copper in loose meshed sacks, floated or drawn through the surface of the body of water which it is desired to purify. The Bordeaux solution idea is lost sight of. If such possibility of purifying water is possible, the world is on the eve of the most wonderful and beneficial discovery that has characterized any age.

If the experiments prove a fact, and the germs of typhoid and malaria are destroyed by the presence of sulphate of copper in the water, there is a further problem to be considered, and that is whether the presence of the chemical in the water be deleterious; while it may destroy the bacilli, can it be taken with the drinking water by the human individual with entire safety or with absence of

*Rowell, Hubert N., M. D., Berkely, Cal., New York Med. Journal, May 7, 1904.

harmful effect. All of these important considerations will yet need further study and experiments to prove conclusively the real value of the discovery, if it is a discovery.

There are the best reasons that the matter be fully investigated by the proper authorities, and as it is well suggested by the Department of Agriculture, that no tests of the methods described will be attempted without first consulting with the department, since the information and experience gained by the originators may be of much value besides saving expense to those desiring to make experiments. New York and Philadelphia boards of health, we understand, are experimenting in this line.

That such an infinitesimal quantity of chemical substance can exert a sufficiently destructive effect upon the germs of typhoid or the poison which the mosquito thrives upon is certainly most remarkable, and does not seem quite possible, though in these days of startling occurrences we may, of course, expect the unexpected to occur at any time. Time and investigation will prove the efficiency or falsity of the claim.

Minutes of the Fifty-first Annual Session of the Medical Society of the State of North Carolina, Held in Raleigh, N. C., May 24, 25 and 26, 1904.

GENERAL MEETING.

The Society was called to order at 10 a. m., in the Hall of the House of Representatives, by Dr. Hubert A. Royster of Raleigh, Chairman of the Committee of Arrangements, who introduced the President, Dr. H. B. Weaver, who assumed the chair.

Hon. Ed. Chambers Smith of Raleigh, delivered an address of welcome from the City of Raleigh. Dr. B. F. Dixon, State Auditor, delivered the address of welcome.

Dr. J. M. Parrott of Kinston, responded for the Society in a most graceful speech.

The President's Address was then delivered by Dr. H. B. Weaver of Asheville.

On motion the President was thanked for his most excellent address, and it was referred to the House of Delegates.

Section on Physiology and Chemistry called. Dr. F. L. Siler, chairman, being absent, his report, a paper on "The Effect of Precipitins on the Human Blood" was read by title and referred to the Committee on Publication.

A most instructive paper on "The Value of Knowing the Composition of Infant Foods" was read by Dr. Jos. Graham of Raleigh. Discussion participated in by several. Dr. Graham's paper referred.

The Section on Pathology and Microscopy was called. Dr. M. L. Stevens, the chairman being absent, his paper, "The Local Clinical Laboratory," was read by title and referred.

"Report of a Fatal Case of Gonorrhœal Septicæmia," by Dr. E. Jenner Wood of Wilmington, was read by title and referred.

A valuable paper entitled "Dermoid Cysts of the Ovary" was presented by Dr. R. H. Whitehead of Chapel Hill. Referred to Publication Committee.

"What work shall we do ourselves and what refer to the Clinical Laboratory," by Dr. W. H. Prioleau of Asheville, was referred.

On Motion a recess was taken until 3 p. m.

AFTERNOON SESSION—GENERAL MEETING.

Tuesday, May 24th, 1904.

The General Meeting was resumed in Representative's Hall at 3 p. m. President H. B. Weaver, in the chair. Section on Pathology and Microscopy resumed.

Dr. McNider presented a paper on "Papillomata and their Degenerations." Discussion. Referred to Committee.

On motion of Dr. Parris, the three papers on different phases of "hook-worm" disease were postponed until Wednesday 9 a. m.

(The President retiring to attend the House of Delegates, a temporary chairman was selected, the Vice-Presidents being absent at the moment).

A paper on "Quinine" was presented by Dr. J. M. Parrott. Discussion. Referred.

Dr. Pettet presented a paper entitled "A Plea for More Just Judgment of Drug-Users." Discussion. Referred.

Dr. S. M. Crowell presented an interesting paper on "A Modern Method of Treating Drug Addictions" which elicited in connection with Dr. Pettet's paper an instructive discussion. Paper referred.

"Medical Dietetics in General Practice" by Dr. Geo. P. Edwards, was read by title and referred.

Dr. R. V. Brawley of Salisbury, read a valuable practicable paper on "Some Uses and Abuses of Glasses." Discussion. Referred.

Dr. Michael Hoke presented a paper on "Treatment of Joints Injured by Chronic Rheumatism." Discussion. Referred.

A recess was then taken until 8 p. m.,

EVENING SESSION—GENERAL MEETING.

Tuesday, May 24th, 1904.

The General Meeting was resumed at 8 p. m. Vice-President Dr. Jno. C. Rodman in the chair.

The Annual Essay entitled "An Ounce of Prevention" was read by Dr. J. G. Blount of Washington, N. C., and listened to with much interest. Referred.

The Annual Debate with Dr. J. A. Williams of Reidsville as leader, followed with "Diphtheria" as the topic. A very able

discussion followed, participated in by quite a number of members including Drs. Cobb, Burroughs, Nicholson, I. W. Faison, Graham, Fox, and others. Referred.

On motion Dr. Paquin was invited to present his paper this evening as he was called away on the early morning train.

"The Relation of the General Practitioner to the Prevention and Cure of Tuberculosis" was read by Dr. Paquin. Referred.

A recess was ordered until 9:15 a. m.

WEDNESDAY A. M.—GENERAL MEETING.

Session resumed at 9:15 a. m. Dr. Weaver in the chair.

On motion of Dr. J. M. Parrott the courtesies of the floor was extended to Drs. A. C. Wood of Philadelphia, and Dr. Wright, of Virginia.

Section on Practice of Medicine taken up.

Dr. W. S. Rankin read a paper, "Uncinariasis in North Carolina; Its Distribution, Frequency, etc."

Dr. W. P. Ivey of Lenoir, read a paper on "Uncinariasis in the Mountains of North Carolina."

Dr. J. L. Nicholson of Richlands, being absent, his paper, "Uncinariasis in Eastern North Carolina," was, on motion, read by Dr. R. H. Lewis.

On motion the three papers were referred to Committee on Publication.

An instructive discussion followed led by Dr. R. H. Lewis and participated in by several members.

"Infection" was the subject of the next paper which was presented by Dr. I. W. Faison of Charlotte. Referred.

"Immunity" was presented in a short paper by Dr. Albert Anderson of Wilson. Both papers were referred after a short discussion.

"Uric Acid and Metabolism" was read by Dr. B. K. Hays of Oxford, and referred without discussion the hour for the conjoint session having arrived.

Dr. Royster announced the delivery of the Annual Oration in Metropolitan Hall at 8 p. m., also the lecture of Prof. Baskerville, on "Radium and Radio-Activity in Medicine" to follow immediately afterwards, and this to be followed by the Capital Club reception to which all the members and their attending ladies were cordially invited.

CONJOINT SESSION OF GENERAL MEETING OF THE SOCIETY AND THE STATE BOARD OF HEALTH.

Dr. Frank Duffy presided. Dr. R. H. Lewis, Secretary of State Board of Health, expressed his great pleasure at the very large attendance at the conjoint session and referred to its being unprecedented. He also presented his annual report, after which

he presented some resolutions looking toward a furthering of the cause of preventive medicine in cases of Tuberculosis. Discussion by Drs. Paquin, Weaver, Lewis, I. W. Faison, Stancill, Roberts, and others.

On motion the report of the Secretary with the supplementary resolutions were adopted. At 1:30 p. m., the conjoint session was declared adjourned.

A recess was then taken by the Society until 3 p. m.

WEDNESDAY P. M.—GENERAL MEETING.

The Discussion of Dr. Hay's paper on "Metabolism" interrupted by the conjoint session was resumed by Dr. Malone and others.

"Pneumonia," by Dr. J. C. Montgomery of Charlotte was the next paper and elicited a spirited discussion by Drs. A. G. Carr, Pettet, Hudson, Roberts, R. L. Payne, H. W. Lewis, R. H. Lewis, S. M. Crowell.

The discussion on Pneumonia was interrupted by the entrance of His Excellency Gov. Chas. B. Aycock, who delighted the doctors with a ten minutes speech after which the discussion was continued by Drs. Malone, Carr, I. W. Faison, etc.

Paper by Dr. Jas. Sawyer, "Asthma," was read by title and referred.

Paper entitled "Cases of Tuberculosis Five Years After Treatment With Culture Products" was read by Louis F. High of Southern Pines.

"The Relation of the General Practitioner to Prevention and Cure of Tuberculosis" by Dr. Holding of Wake Forest, was read by title.

"Malaria as Complicating Typhoid Fever," was read by title by Dr. A. S. Pendleton of Henderson.

"An Atypical Form of Typhoid Fever with Sub-normal Temperature," was read by Dr. J. D. Roberts of Mt. Olive. Discussion.

The "Bedside Diagnosis of Typhoid Fever" by Dr. Chas. Z. Candler of Dillsboro, was read by title and referred.

Dr. J. H. Honnett of Wilmington, read a paper on "Specific Keratitis and Trachoma." Referred.

"Adenoids in Children," was the title of a paper presented by Dr. R. J. Teague of Roxboro.

Discussion by Drs. J. A. Williams, Kenna and A. G. Carr.

The paper of Dr. Briggs, of Asheville, entitled "The Pupil Reflex an Aid to Diagnosis" was read by title the author being absent.

The Section on Anatomy and Surgery was then taken up.

"Dr. A. C. Wood of Philadelphia presented a paper on "Cholelithiasis with Spe-

cial Reference to Surgical Treatment," and also exhibited a number of gall-stones he had removed by operative procedure.

On motion the paper of Dr. Hugh Taylor on "A Plea for Early Explorative Incision for Diagnostic and Curative Ends in Masked Conditions of the Upper Portions of the Abdomen." The two papers were discussed together by Drs. J. W. Long and Stuart McGuire. Referred to committee.

"Gun-shot Wounds of the Abdomen" was the next and was presented by Dr. J. W. Long of Greensboro.

The Secretary of the Society, Dr. J. Howell Way, presented the Report from the House of Delegates to the General Meeting advising of the election of officers for the ensuing year, selection of place of meeting, and other items of a business character performed by the House of Delegates. On motion the report was received with thanks.

On motion a recess was taken until 9:15 Thursday a. m.

At 8 p. m. the members of the Society accompanied by their friends and large audience of Raleigh's best citizens attended the evening exercises in Metropolitan Hall where the Annual Oration on "Æsculapian Dreams," was delivered by Dr. Chas. A. Julian of Thomasville. It was a most charming oration and exceedingly well delivered. This was followed with a very instructive lecture on "Radium and Radio-Activity in Medicine," by Dr. C. M. Baskerville of the University of North Carolina.

At the conclusion of the Metropolitan Hall exercises the Society repaired to the spacious club-rooms of the Capital City Club where the evening was most delightfully spent.

GENERAL MEETING.

Thursday Morning, May 26th, 1904.

Session resumed at 10 a. m. Vice-President Rodman in the chair. Section on Anatomy and Surgery resumed.

A paper on "The Use of the Systoscope" was presented by Dr. A. J. Crowell of Charlotte. Discussion, Drs. Parrott, Crowell and others. Referred.

Dr. Stuart McGuire presented a paper on "United Fractures" which was discussed by Drs. Whittington, Hays and others. Referred.

"Common Fractures in Private Practice" was read by title by Dr. F. H. Russell and referred.

Dr. Whittington of Asheville, presented an able paper on "Abdominal Surgery, Preparation and After-treatment." Referred.

Dr. McBrayer's paper entitled "Report of a Case of Talma's Operation One Year After Operation," read by title and referred.

"Gas and Ether Anæsthesia" was presented by Dr. Southgate Leigh, and was discussed by Drs. Dickenson, Cobb, Hines, Whittington, Coppedge Mason, Williams, Malone, Taylor and Monroe.

The session of the General Meeting was then interrupted by the entrance of the House of Delegates, headed by the President of the Society and the Committee of notification Drs. T. E. Anderson and R. H. Whitehead, who introduced the President-elect Dr. D. T. Tayloe who in a brief speech expressed his appreciation of the honor conferred upon him and assumed the chair.

The discussion of Dr. Leigh's paper was resumed by Dr. Templeton and closed by Dr. Leigh.

Dr. C. M. Poole, by order of the House of Delegates, presented the Report of the Obituary Committee which was on motion adopted, and referred to Committee on Publication.

"Nephritis" was the title of paper read by Dr. R. E. Mason of Charlotte. Discussion by Dr. A. J. Crowell.

"Treatment of Neurasthenia" was read by Dr. J. P. Monroe. Referred.

"Neurasthenia," by Dr. E. B. Ferree was read by title and referred. Recess was taken until 3 p. m.

GENERAL MEETING — THURSDAY AFTER-NOON.

Session resumed at 3 p. m. Dr. Tayloe, the President-elect in the chair.

Section on Gynæcology was taken up.

"Immediate Repair of Lacerated Perineum" was presented by Dr. P. A. Nicholson of Washington, Chairman of the Section. Discussed. Referred.

Dr. A. K. Tayloe of Tarboro, presented the next paper entitled "A Protest Against Indiscriminate Operations on the Female Organs of Generation." Discussed by Drs. H. A. Royster and others.

"Lacerated Cervix, Results, Treatment" by Dr. Macon, was read by title and referred.

Dr. Holding of Wake Forest, presented an excellent paper on "Tuberculosis." Discussion by Drs. Weaver, Whittington and others.

Dr. H. A. Royster presented an interesting collection of specimens from his gynæcological clinic.

Dr. Way offered a resolution expressive of the Society's appreciation of the splendid success attending the great efforts put forth by the Raleigh profession to render the meeting the greatest in the Society's history. Adopted by a rising vote. Society adjourned sine die.

H. B. WEAVER
J. HOWELL WAY,
President.
Secretary.

HOUSE OF DELEGATES OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA.

(1st) Annual meeting at Raleigh, N. C. (51st of the Society) May 24, 25, 1904.

The House of Delegates met in Senate Chamber at 3:15 p. m. Tuesday, May 24. President H. B. Weaver and Secretary J. Howell Way at their posts.

A roll-call showed the following officers, Councillors and County Medical Society Delegates present:

President, H. B. Weaver.

Secretary, J. Howell Way.

Treasurer, G. T. Sikes.

Councillors: D. T. Tayloe, Frank H. Russell, Albert Anderson, Hubert A. Royster, Edward C. Register. Thos. E. Anderson, Jas. A. Burroughs. Councillors absent: Oscar McMullan, H. S. Lott, J. F. Highsmith.

Delegates from County Medical Societies duly chartered.

Perquimans County Medical Society, T. S. McMullan, Hertford.

Washington County Medical Society, B. F. Halsey, Roper.

Hertford County Medical Society, S. S. Daniels, Winton.

Martin County Medical Society, W. H. Harrell, Williamston.

Pitt County Medical Society, W. H. Bagwell, Greenville.

Beaufort County Medical Society, P. A. Nicholson, Washington.

Lenoir County Medical Society, Jas. M. Parrott, Winston.

Craven County Medical Society, ———

Mew Hanover County Medical Society, F. H. Russell, Wilmington.

Duplin County Medical Society, J. M. Faison, Faisons.

Sampson County Medical Society, F. H. Holmes, Clinton.

Columbus County Medical Society, J. G. Hall, Boardman.

Northampton County Medical Society, H. W. Lewis, Jackson.

Halifax County Medical Society, H. B. Ferguson, Halifax.

Nash County Medical Society, W. H. Whitehead, Rocky Mount.

Edgecombe County Medical Society, S. N. Harrell, Tarboro.

Johnson County Medical Society, L. D. Wharton, Smithfield.

Wilson County Medical Society, E. T. Dickenson, Wilson.

Wayne County Medical Society, J. F. Miller, Goldsboro.

Greene County Medical Society, W. W. Whittington, Bullhead.

Cumberland County Medical Society, A. S. Rose, Fayetteville.

Robeson County Medical Society, H. T. Pope, Lumberton.

Scotland County Medical Society, A. W. Hamer, Laurinburg.

Richmond County Medical Society, A. C. Everett, Pegues.

Moore County Medical Society, Gilbert McLeod, Carthage.

Harnett County Medical Society, J. F. McKay, Buie's Creek.

Wake County Medical Society, G. M. Bell, Wakefield, L. B. Young, Rolesville.

Franklin County Medical Society, R. F. Yarborough, Louisburg.

Vance County Medical Society, G. A. Coggeshall, Henderson.

Granville County Medical Society, S. D. Booth, Oxford.

Person County Medical Society, R. J. Teague, Roxboro.

Caswell County Medical Society, H. H. Dodson, Milton.

Alamance County Medical Society, W. R. Coley, Graham.

Orange County Medical Society, R. H. Whitehead, Chapel Hill.

Anson County Medical Society, J. M. Covington, Jr., Wadesboro.

Union County Medical Society, J. P. Munroe, Monroe.

Mecklenburg County Medical Society, Geo. W. Pressley, I. W. Faison, Charlotte.

Cabarrus County Medical Society, D. G. Caldwell, Concord.

Lincoln County Medical Society, T. F. Costner, Lincolnton.

Gaston County Medical Society, E. C. Boyette, Mt. Holly.

Cleveland County Medical Society, S. S. Royster, Mooresboro.

Rutherford County Medical Society, R. F. Jonas, Thermal City.

Guilford County Medical Society, D. A. Stanton, High Point, M. F. Fox, Guilford College.

Forsythe County Medical Society, E. F. Strickland, Bethania.

Stokes County Medical Society, W. B. Moore, Smith.

Surry County Medical Society, J. B. Smith, Pilot Mountain.

Yadkin County Medical Society, M. L. Matthews, East Bend.

Davidson County Medical Society, D. J. Hill, Lexington.

Rowan County Medical Society, C. M. Poole, Craven.

Iredell-Alexander County Medical Society, Thos. E. Anderson, Statesville.

Caldwell County Medical Society, W. P. Ivey, Lenoir.

Burke County Menical Society, I. M. Taylor, Morganton.

Buncombe County Medical Society, M. H. Fletcher, Asheville.

Haywood County Medical Society, J. F. Abel, Waynesville.

Transylvania County Medical Society, W. J. Wallis, Brevard.

Jackson County Medical Society, Chas. Z. Chandler, Dillsboro.

Macon-Clay County Medical Society, S. H. Lyle, Franklin.

Cherokee-Graham County Medical Society, R. J. Orr, Robbinsville.

(Delegates from some additional counties were present later in the session.)

The Annual Report of the Secretary was presented in detail. It referred to the changes and additions to the annual volume of Transactions, to the preparation and circulation of literature relative to the new organization affected during the year, the earnest work of the Council, without which the organization could not have been so effective, etc. Charters had after formal application and approval of the same by the District Councillor been issued to the following County Medical Societies:

Buncombe, Haywood, Burke, Madison, Catawba, Person, Orange, McDowell, Robeson, Forsythe, Johnson, Transylvania, Sampson, Gaston, Iredell, Alexander, Brunswick, Cumberland, Granville, Yancey, Cabarrus, Scotland, Cleveland, Greene, Mecklenburg, Henderson, Polk, Guilford, Rutherford, Caldwell, Duplin, Vance, Stokes, Franklin, Caswell, Beaufort, Alamance, Ashe, Anson, Moore, Jackson, Davidson, Swain, Cherokee, Graham, Halifax, Wilson, Union, Macon-Clay, Nash, Columbus, Rowan, Pitt, Wake, Northampton, Wilkes, Harnett, Yadkin, Onslow, Wayne, Richmond, Davie, Edgecombe, Craven, Lincoln, Pender, Hertford, New Hanover, Montgomery, Randolph, Martin, Pasquotank-Camden-Dare, Currituck, Perquimans, Washington. In all 72 charters had been issued including 78 counties. To date of May 20, '04, formal Annual Reports had been received from 66 of the above listed Societies, including 72 counties reporting in the 72 counties 222 legal physicians residing who had not joined the County Societies, and 990 members of the County Societies. The Secretary urged the continuance of an earnest friendly effort to secure the enlistment of additional members in the counties now organized and advised the continuance of work in the unorganized counties. Especial reference was made by the Secretary to the fact of the marked promotion of friendly relations among the physicians growing out of the social contact in the County So-

cieties and the cultivation of these relations were strongly urged as tending to promote and to foster the best interests of the profession.

The report elicited much discussion, participated in by Drs. Booth, Burroughs, I. W. Faison, T. S. McMullen, Costner and others. After a full discussion it was moved and seconded the Secretary be tendered a rising vote the sincere thanks of the Society for his earnest and indefatigable labors for the extension of the organization and the upbuilding of the profession. Carried unanimously.

Dr. Way moved a similar vote of thanks to the Council, without whose zealous efforts, he said, the work could not have been done. Carried unanimously.

Letters of regret with reports of their work were read from Councillors Drs. Highsmith, McMullan and Lott.

Verbal reports of the work done were made by Councillors Drs. A. Anderson, E. C. Register, Thos. E. Anderson, F. H. Russell, Jas. A. Burroughs, H. A. Royster. D. T. Tayloe—all expressed themselves as being pleased with the success of the work for the year and felt encouraged to believe that we were now in a position to develop a prestige and an influence for our profession never before possible in an unorganized condition.

On motion the action of the President and Secretary in issuing Charters to 77 Component County Medical Societies was approved.

The Secretary reported from the General Meeting of the Society held this morning. The President's address which was on motion referred to the following committee:

C. M. Poole, J. M. Parrott, J. F. Abel.

The appointment of the Nominating Committee was taken up and it was ordered that the delegates from each Councillor's District select their member, which was done, and the following committee announced:

T. S. McMullan, S. S. Daniels, F. H. Russell, J. F. Miller, A. C. Everett, S. D. Booth, S. S. Royster, D. A. Stanton, D. J. Hill, J. Howell Way.

Recess was taken until 9:30 Wednesday a. m.

WEDNESDAY, MAY 25TH.

HOUSE OF DELEGATES.

Session resumed at 9:30 a. m. President Weaver in the chair. Reports of the committees called for. Committee on nominations reported the following officers for the ensuing term:

President, David T. Tayloe, Washing-

1st Vice-President, C. A. Julian, Thomasville.

2d Vice-President, John T. Burrus, High Point.

3d Vice-President, I. W. Faison, Charlotte.

COUNCILLORS (3 YEARS TERM.)

1st District, Oscar McMullan, Elizabeth City.

2d District, S. S. Daniels, Winton.

3d District, Frank H. Russell, Wilmington.

4th District, Albert Anderson, Wilson.

5th District, J. F. Highsmith, Fayetteville.

6th District, Herbert A. Royster, Raleigh.

7th District, E. C. Register, Charlotte.

8th District, H. S. Lott, Winston.

9th District, Thos. E. Anderson, Statesville.

10th District, Jas. A. Burroughs, Asheville.

Orator, Chase P. Ambler, Asheville.

Essayist, Jno. Hill Tucker, Henderson.

Leader of Debate, E. T. Dickenson, Wilson.

Committee on Scientific Work, J. Howell Way, R. H. Whitehead, D. J. Hill.

Committee on Public Policy and Legislation, R. H. Lewis, Geo. G. Thomas, Geo. W. Long, D. T. Tayloe, J. Howell Way.

Committee on Publication, J. Howell Way, Geo. W. Pressley, H. McKee Tucker.

Committee on Finance, Jas. A. Burroughs, T. E. Anderson, Frank Duffy.

Committee on Obituaries, C. M. Poole, H. H. Harris, K. P. Battle, Jr.

On motion the report was received and the Secretary instructed to cast the ballot of the Society for the report as the choice of the Society for officers and committeemen for the ensuing term, Carried.

The Secretary reporting a communication for the Secretary A. M. A. advising of ineligibility of Dr. A. Anderson, to serve as Delegate to the Association, he not having been a member of that body two years at the time of his election last year. The Nomination Committee reported the name of Dr. Hubert A. Royster to fill the vacancy. So ordered.

Committee on Nominations reported Greensboro as the place of meeting for 1905. Winston was also suggested. A vote being had Greensboro was adopted.

May was reported by Committee and appointed the month of meeting and fixing of date left with the Secretary and Local Committee.

Committee on Nomination reported the following delegates to other Societies.

To Virginia Medical Society, James A. Burroughs, S. D. Booth, H. W. Lewis.

South Carolina State Society, A. J. Crowell, W. J. McAnally, C. L. Pridgen.

Mississippi Valley Medical Association.

H. B. Weaver, D. A. Stanton, James A. Burroughs, M. H. Fletcher

The Council recommended the name of Dr. R. L. Payne for election to honorary membership. On motion the report of the Council was adopted.

A resolution was presented looking to providing some method whereby the former members of the State Medical Society, who resided in counties having no component County Medical Society, could retain their membership in the State Medical Society, but after a prolonged discussion in which the case with which the organization of Component County Society was emphasized, the matter was laid on the table.

Recess taken until Thursday subject to call of the President.

THURSDAY A. M.

House of Delegates met at 10:30 a. m., pursuant to call of President.

Dr. Sikes presented a question of personal privilege growing out of the refusal of a member to adjust his back dues to the Society. The House by a unanimous vote, expressed its hearty approval of Dr. Sikes' course in the premises and commended his zeal in furthering the interests in the Society. On motion of Dr. Way it was ordered the publication of the list of Honorary Members as it was when the re-organization took effect June, 1903, and Honorary Fellows. Carried.

The Council submitted the name of Dr. John C. Walton of Danville, Va., for election as Honorary Member of the State Society. Adopted.

The Finance Committee presented the following report which was unanimously adopted:

The Treasurer's books show he has collected during the past year \$2115.20. Accounts examined show disbursements of \$1336 39, leaving cash on hands \$1904.32, including the balance on hand June 2nd, 1903, of \$570.51. It is noted there are, as usual, a number of unpaid accounts. The per capita assessment as fixed by our laws, is \$2.00 for each member of a Component County Society, due and payable through the Secretary of the County Medical Society to the Treasurer of the State Society.

We recommend the salary of the Secretary of the State Society, in view of the greatly increased labor of the office be increased to \$300.00 per annum. In doing this we desire to express our appreciation of the splendid work he is doing for

the advancement of the best interests of the profession of the State, believing the additional salary falls far short of the adequate compensation for the splendid service he has performed.

We also commend the faithful and efficient service of our Treasurer and advise his salary be increased to \$150.00 per annum.

Adopted unanimously.

Dr. Poole, chairman Committee on Obituaries presented the Annual Report which was on motion ordered to be read in the General Meeting.

A letter from Dr. H. S. Lott, the esteemed Councillor of the 8th District was read expressing his pleasure in having been able to serve the profession in organizing his district, but declining the office of Councillor.

On motion the House accepted the resignation and recorded its appreciation of Dr. Lott's efficient work.

The Committee on Nominations announced the name of Dr. D. A. Stanton of High Point, to succeed Dr. Lott as Councillor for the 8th district. Adopted.

The Committee on President's message reported as follows:

Your committee report: After considering the Annual Address, we recommend First, a vote of thanks to our esteemed President for his magnificent address and its wise suggestions and as well for his splendid efforts in securing the organization of the profession in the counties of the State.

Second—We regard as a wise one the suggestion of public sanatoria for the treatment of tuberculosis and advise that this matter be placed in the hands of the Committee on Public Policy and Legislation, and urge them to take such steps as they deem best.

Third—We heartily endorse the position assumed by the address as regards the case of State vs. Biggs, and advise that the Committee on Public Policy and Legislation be instructed to employ legal counsel whenever in their opinion the best interests of the profession demand it.

On motion report adopted.

On motion of Dr. Way, it was ordered that the Treasurer give a bond made to the President as Trustee for the Society in some reliable bonding company for the funds in his hands.

On motion of Dr. Way the chair appointed Drs. R. H. Whitehead and Thos. E. Anderson a committee to wait upon the General Meeting and advise them of the conclusion of the business of the House and its desire to introduce to them the President-elect for the ensuing year.

The committee retired and upon their return announced the General Meeting was

prepared to receive the House with the President-elect.

Thereupon the House prepared to move in a body to the General Meeting headed by its officers and the Notification Committee, and the 1st annual session of the House of Delegates of the fifty-first session of the Medical Society of the State of North Carolina stood adjourned sine die.

H. B. WEAVER, Prest.

J. HOWELL WAY, Secretary.

Book Notices.

Arteria Uterina Ovarica, The Utero-Ovarian Artery or The Genital Vascular Circle, Anatomy and Physiology, with their Application in Diagnosis and Surgical Intervention. Byron Robinson, B. S., M. D. Chicago, Ill. Author of "Practical Intestinal Surgery," "Landmarks in Gynecology," "Life-Sized Chart of the Sympathetic," "Abdominal Brain," "Colpoperineorrhaphy and the Structures Involved," "The Ureter," "Gynecologic Charts of Genital Circulation." Chicago, Ill.: E. H. Colegrove, 1903.

This monograph contains about 190 pages. The data on which it is based has been secured through fifteen years of experimental research and an extensive gynecological practice. The author has certainly devoted much time in securing accurate and reliable illustrations from nature. The labor in producing the illustrations has certainly far exceeded that of producing the text and will be a great deal more valuable and interesting to the reader. The author apologizes for repetition in the book which was necessary from the fact that each chapter is practically complete in itself and also that the vast functional changes in the utero-ovarian artery, as in gestation, calls for an extra chapter of observation.

The accurate and excellent X-Ray work was done by Dr. Pratt, of Chicago.

This original work will add no little to the improvement in this line of medical literature in this country.

The price of the book is \$1.00 and those who are interested in the anatomy of this part of the body will be benefitted by looking over it.

The Practical Medicine Series of Year Books comprising ten volumes on the year's progress in medicine and surgery. Issued monthly under the general editorial charge of Gustavus P. Head, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical

School. Volume VI—General Medicine, edited by Frank Billings, M. S., M. D. Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, M. D., Professor of Medicine, Chicago Clinical School. May, 1904. Chicago: The Year Book Publishers, 40 Dearborn Street.

This volume of this well known series is fully as valuable and as interesting as any of the former volumes that have appeared. It contains 330 pages and deals with General Medicine.

These books are published principally for the use of the general practitioner, at the same time, the arrangement of several volumes enables those interested in special subjects to buy only the part they desire. The price of each volume is \$1.00, or for the entire set of twelve \$5.50 payable in advance.

The work is fully indexed and has many appropriate illustrations and its uniform binding is very attractive.

Rontgen Ray Diagnosis and Therapy. By Carl Beck, M. D., Professor of Surgery in the New York Post-Graduate Medical School and Hospital. Visiting Surgeon to St. Mark's Hospital and the German Poliklinik. With 322 Illustrations in the Text. New York and London: D. Appleton & Company, 1904.

While there has been a great deal of literature written upon the subject of Rontgen Rays during the last two or three years, a great deal of it compiled in the standard text books, yet they do not seem to be complete enough for the Rontgen Ray worker. The author has made a great effort to teach us how the Rontgen Ray can be utilized in medical and surgical practice and he has succeeded admirably. He alludes repeatedly and repeatedly to clinical points and his book is full of numerous and beautiful illustrations. It contains many illustrations of operative steps and of the application of splits, etc., which add a great deal to the value of a book of this kind.

While these practical features are predominating factors of the book, the theoretical parts are not neglected. They are of so complicated a nature that they require special study, as do the microscope, the laryngoscope, the ophthalmoscope, asepsis, etc. It is very essential for the employment of the apparatus that these complicated workings be mastered and the various changes in the tube understood.

In the general part the author has furnished a guide for practical work, emphasizing the essential points only. He has

refrained from discussing the elementary principles of electricity and from describing the large number of apparatus in the market because they are thoroughly advertised and explained by the various firms interested.

As the book is written for physicians, great stress has been laid upon topographic anatomy. He regards none except the physician as competent in Rontgen science. He believes correctly that it is only the knowledge of anatomy and pathology, which permits correctly, placing the part to be examined and proper interpretation of the result. He recognizes the fact that many errors which are still attributed to the Rays are not only due to technical faults, but, in the large majority of cases, to insufficient knowledge of normal anatomy, and the proper application of the instruments.

Altogether the book is one of the most valuable, certainly the most practical, of any that we have had the opportunity of examining upon this subject. It contains 460 pages carefully and accurately indexed, substantially and beautifully bound.

Medical Diagnosis—Special Diagnosis of Internal Medicine—A hand-book for physicians and students. By Dr. Wilhelm V. Leube, Professor of Medicine, and Physician-in-Chief to the Julius Hospital at Wurzburg. Authorized Translation from the Sixth German Edition. Edited by Julius L. Salinger, M. D., late Assistant Professor of Clinical Medicine in the Jefferson Medical College, and Physician to the Philadelphia Hospital. With five colored plates and seventy-four illustrations in the text. New York and London: D. Appleton & Company, 1904.

This book contains 1058 pages. Its publishers have done their work well and beautifully. A book on special diagnosis and internal medicine as full and complete as this one has been needed in this country for some time. It is a plain, practical work which describes the diseases and the various differential points in a lucid and practical manner. The fact that a medical work has appeared in its sixth edition in the course of twelve years is a sufficient evidence of its value.

The main features of this text-book consists in the explicit differential diagnosis. If it is true the rational treatment depends upon the accuracy of diagnosis, the fundamental requirements of the therapist will be diagnosis in its broadest sense; not only the ability to recognize the true nature of the affection, but the knowledge of its course, complications and eventual termi-

nation. The author has been singularly successful in presenting some of the most difficult problems of the diagnosis of internal diseases in a clear, concise manner, never attempting the impossible.

The work has been brought thoroughly up-to-date, but it has been necessary occasionally to add some few descriptions, etc.; these have been inclosed in brackets so as to distinguish them from the original text.

We recommend the book. It is the best of the kind that has come to our office for a long time.

Progressive Medicine, Vol. II, June, 1904.

A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, 334 pages, 47 illustrations. Per annum, in four cloth-bound volumes, \$9.00; in paper binding \$6.00, carriage paid to any address. Lea Brothers & Co., Publishers, Philadelphia and New York.

No effort has been spared to render the volume in every sense a worthy exponent of the purpose indicated by its title. To do this creditably is, indeed, a task of no mean order. There has never been a period during which investigation has been so eager, publication so profuse, and speculation so rife. Necessarily, the enormous output includes all qualities of product, the new is mingled with the antiquated, and facts are confused with theory.

It is this which renders it so difficult for the physician to keep abreast of the progress of his science. Time, indeed, winnows the chaff from the grain, but he cannot wait for such proof. In this age of ambitious progress, there is an imperative demand for an efficient solution of the problem—how to keep up to date, how to manage the literature, how to be "a modern physician."

Progressive Medicine meets these requirements and the favorable reception which has been accorded to this publication justifies the assertion.

The June issue contains four subdivisions: Surgery, gynecology, medicine and ophthalmology. Each of these articles, which together cover the major domain of modern medicine, is from the pen of an authority especially selected for the qualities which the task preeminently requires—experience, trained judgment and critical acumen. The aim of the authors has not been to summarize *all* that has been written within the sphere of their respective sub-

jects: their purpose is to give the best, the most reliable, the truly progressive contributions to modern theory and practice, and to skillfully weld this new material into the great structure of modern medicine.

With such characteristics, it is patent that Progressive Medicine is essential to the mental armamentarium of every physician. It is literally the "finishing touch" to his library. Never has the advanced thought of the day been presented in a manner so clear, and so applicable by the worker in every line, be it general medicine, or surgery, or one of the specialties.

The general get-up of the work is certainly a model as to print, paper and illustration. Notwithstanding the moderate price, nothing has been spared to make the volumes technically and artistically perfect.

Diseases of the Nose and Throat. By D. Braden Kyle, M. D., Professor of Laryngology and Rhinology, Jefferson Medical College, Philadelphia; Consulting Laryngologist, Rhinologist and Otologist, St. Agnes' Hospital. *Third Edition, Thoroughly Revised and Enlarged.* Octavo volume of 669 pages, with 175 illustrations, and 6 chromo-lithographic plates. Philadelphia, New York, London: W. B. Saunders & Company, 1904. Cloth, \$4.00 net; Sheep or Half Morocco, \$5.00 net.

In presenting to the profession the third edition of this work the general plan of the previous editions has not been materially altered. The entire book has been carefully revised and such additions have been made as were rendered necessary by recent medical progress. The most important alterations and additions have been made in the chapters on Keratosis, Epidemic Influenza, Gersuny's Paraffine Method for the correction of Nasal Deformities, and in the one on the X-rays in the treatment of Carcinoma. The etiology and treatment of Hay Fever have been partially rewritten and much enlarged, as has also the operative treatment of Deformities of the Nasal Septum. In the chapter devoted to general considerations of Mucous Membranes and Hay Fever the author records the results of his experience in the chemistry of the saliva and nasal secretions in relation to diagnosis and treatment. The literature has been carefully reviewed, and a number of new illustrations added, thus bringing the work absolutely down to date.

A Text-Book of Mechano-Therapy (Massage and Medical Gymnastics). For Medical Students, Trained Nurses, and Medical Gymnasts. By Axel V. Grafstrom, B. Sc., M. D., Attending Physician to the Gustavus Adolphus Orphan-

age, Jamestown, N. J. *Second edition, revised, enlarged, and entirely reset.* 12 mo of 200 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Company, 1904. Cloth, \$1.25 net.

The second edition of this useful little work has been entirely rewritten, reset, and very much enlarged. Two chapters have been added—one on Massage of the Eye, Ear, Nose, and Throat, and the other on Pelvic Massage. Seventeen new illustrations have also been added. The author states that his object has been to present a work that would be useful as a text-book to students, trained nurses, and medical gymnasts, and as a reference book for the general practitioner, and in our opinion he has fully accomplished his purpose. It is certainly a practical and clear consideration of the subjects of massage and medical gymnastics, and it is with pleasure that we recommend it to our readers. The mechanical get-up is all that could be desired.

Obstetrics. Part V of the Practical Medicine Series of Year Books. The Year Book Publishers, 40 Dearborn Street, Chicago.

The past year has been unusually fruitful in writings on obstetrics and therefore Dr. Lee, the editor of this work, has had ample material from which to draw. Although many difficulties that are met in this branch of medicine are yet open questions, the past twelve months have shown considerable advances and the various theories of the unsolved problems make interesting reading. The chapters on The New Born Child and Operative Obstetrics are especially noteworthy.

Transactions of the American Pediatric Society, Fifteenth Session, held at Washington, D. C., May 12, 13 and 14, 1903. Edited by Walter Lester Carr, M. D. Reprinted from Archives of Pediatrics. 1903.

The Transactions of this Society come to us this year in a neat volume of 234 pages profusely illustrated and containing many articles by a man Nationally known in this special line of work. The editor has done his work well.

Important New Book. Outlines of Psychiatry, by Charles Gilbert Chaddock, M. D., Professor of the Diseases of the Nervous System in the Marion-Sims-Beaumont College of Medicine, Medical Department of the St. Louis University; formerly Assistant Medical Superintendent of the Northern Michigan Asylum; Fellow of the American Academy of Medicine; Honorary Fellow of the Chi-

cago Academy of Medicine; Member of the American Medico-Psychological Association; of the American Medical Association; of the Missouri State Medical Association; of the St. Louis Medical Society; Translator of Krafft-Ebing's Hypnotism, Psychopathia Sexualis, and Treatise on Insanity, and of Schrenck-Notzing's Suggestive Therapeutics; Author of Articles in Hamilton's Legal Medicine and in Peterson and Haines' Legal Medicine.

This volume was written with the view to facilitate the work of the student in beginning the study of insanity. It emphasizes also the neurologic side of psychiatric diagnosis, and will appeal to all who are not well versed in the science of insanity by its simplicity and clearness. Though only an "outline," it will be found to contain the most recent additions to the means of diagnosis of insanity not yet incorporated in any text-book. Maroon Cloth Bound, Uncut Edges, \$2.50 Net, Prepaid. Lewis S. Matthews & Co., 2623 Olive St., St. Louis, Mo.

Materia Medica for Nursing. By Emily A. M. Stoney, Superintendent of the Training School for Nurses in the Carney Hospital, South Boston, Mass. Beautiful 12 mo. volume of 300 pages. Second edition, thoroughly revised. Philadelphia, New York, London: W. B. Saunders & Company, 1904. Cloth, \$1.50 net.

This little work on Materia Medica has proved of great value to the nursing profession, evidenced by the demand for a second edition. The statements are not only clear and definite, but the information given can be relied upon as being accurate. In making the revision for this new second edition, the entire text shows evidence of having been gone over with the greatest care. All the new drugs which have been shown to be of actual therapeutic value have been included, their preparations, uses and doses being clearly and fully described. A valuable feature of the work is the Appendix, containing such practical matter as Poison-Emergencies, Dose-Lists, Weights and Measures, etc., as well as a Glossary of the terms used in materia medica. There is no doubt in our minds but that this little work is the best of its kind.

Abstracts of the Leading Articles of the Month.

Pneumothorax.

Arthur H. Gault, in the Australasian Medical Gazette, says that this disease is a comparatively common condition. He says pulmonary tuberculosis is by far the most com-

mon cause of pneumothorax, accounting for 90 per cent. of the cases. It is a comparatively common accident in advanced phthisis. Of 1000 consecutive post-mortems at the Brompton Hospital, pneumothorax was present in 65. Gangrene, abscess, or hydatid of the lung accounted for most of the other cases. Occasionally it is brought about by disease elsewhere causing a communication with some other air-containing organ. It has been reported in cases of emphysema and whooping-cough. It may also occur as the result of the decomposition of fluid in the pleural sac, due to the presence of gas-forming organisms. In Australia it is a fairly common complication in hydatid disease of lungs. Then there is another group of cases, to which mine belongs, which occur in those apparently healthy; but as recovery often takes place in these, there is no opportunity for deciding as to the presence or absence of any pathological cause. The late Sir William Gull is reported to have said: "Call no man healthy until he is dead and Dr. ——— has made the post-mortem."

E. C., a girl aged 18, came to my consulting room one afternoon. Until the morning of the same day she had enjoyed good health, and had had no cough. Shortly after dressing, and while going about her usual work, but not in any way exerting herself, she had suddenly felt a severe pain in her left side, and found herself very short of breath. This condition had continued, and she had with some difficulty walked half a mile to my room. I found her suffering from marked dyspnoea and pain in her left side. On examination it was noticed that the lower part of the left chest was immovable; slight, though defective movement at the upper part. On percussion the lower half of the left chest was found distinctly hyperresonant; the upper part of same side the note was somewhat higher pitched than on right side. On auscultation, breath sounds were absent, but on deep breathing they could be heard, but distant, and with an amphoric note. Over the upper part of the lung the breath sounds were weak compared with those of right side. The area of cardiac dullness had disappeared, and no impulse could be felt. A distinct bell note could be elicited by striking a coin, and by means of this sign the area of the pneumothorax could easily be marked out. It was found to correspond to the lower lobe of the left lung, though not reaching quite so high behind. I thought it was probably a case of latent phthisis, and the patient was kept in bed with open-air conditions as much as possible for several weeks. The pain was severe for a few days, but there was only a slight rise of temperature (99.4) for three evenings. There was very little cough, no expectoration, no fluid formed in the chest, and in four weeks' time the lung had returned to its normal condition. At all stages a careful examination failed to reveal any special trouble, and up to the present time, 18 months, the girl has kept perfectly well. I have known the girl and her family almost since her birth, and there is no hereditary disposition to phth-

isis, and it looks as if it were really a case where the healthy lung had ruptured without any special exertion.

Various theories have been put forward to account for these cases. A case was recently reported where a child 2½ years old developed pneumothorax, and died in 36 hours. In this case it was found by post-mortem that a grain of wheat had perforated the pleura, having been inspired by the child, but it is extremely unlikely that this should occur in an adult without any symptoms. Some American writers have suggested the possibility of a gas being formed rapidly in the pleural sac without the presence of micro-organisms, a kind of secretion, as it were, from the serous membrane; but this seems a mere surmise, and there is nothing whatever to support it. An analysis of the composition of the gas present might decide the matter, but I think there is no doubt that there is some undiscovered pathological cause present, most likely a small tuberculous deposit. It is stated that these cases frequently develop, after a time, consumption, and it will be interesting to keep this case under observation.

While speaking of the occurrence of pneumothorax in phthisis, I might refer to the opinion expressed by Dr. Hughes, of Guy's Hospital, many years ago, and generally accepted, that if pneumothorax does not prove fatal in the course of a few days or weeks, which it does in the majority of cases, that it appears to have a favorable influence in the course of active pulmonary tuberculosis. It was this thought that led Dr. Murphy, of Chicago, to suggest the artificial induction of pneumothorax by injecting nitrogen into the pleural sac as a remedy for consumption. I have had two cases recently which certainly seem to favour this view. Both cases were male patients in whom there was very active progressing tuberculous disease, when a pneumothorax occurred with very serious symptoms for a time, but afterwards marked improvement took place and one case is probably going on to permanent recovery; the other has remained many years with little change. It is no doubt the complete rest which is secured to the lung which causes the improvement; it is better still to secure this advantage by sanatorium treatment.

Treatment of Typhoid Fever.

Elmer Lee, (Chicago Medical Recorder) suggests the following treatment:

First. Irrigation of the bowel with water, either simple, or soapy with some pure liquid soap.

Second: Frequent sponging with cold water or the use of the wet pack.

Third. Remedies: "Hydrozone and Glycozone, for the oxidizing effect of the nascent oxygen, which is set free in the alimentary tract. But to be of real value these remedies are to be taken in considerable quantities largely diluted with water; the capacity of the bowels is so great that a little of anything can not spread over the enormous area to affect it beneficially. Cleanliness is the principle gov-

erning the use of Hydrozone and Glycozone, Codeine is the best remedy to soothe, and to induce sleep.

Fourth. Foods: Milk is the best; milk and whipped eggs and pressed juice from broiled meat; the juice from ripe, fresh fruit. Nourishment should be taken regularly every four hours. Stimulants and drugs are believed by the author to be injurious without exception.

He says: "Typhoid fever affects all cases, but if food and water were always pure, no class or age need contract the disease. Cleanliness everywhere and always is the means at hand which makes it possible to escape typhoid fever and other diseases of the bowels. Internal cleanliness as well as external is a reasonable proposition to hope for the cure of the unhappy multitude of sick and discouraged humanity."

The Treatment of Pelvic Suppuration.

Puls in the American Gynecology states that the treatment of Pelvic suppuration consists without exception in securing effectual drainage. In simple pelvic abscesses a vaginal incision in the posterior vault, keeping close to the cervix, is a speedy and safe procedure. Posterior colpotomy offers an excellent route for drainage. Through the vaginal opening the various smaller or larger pus sacs are broken up with the fingers or point of the scissors to allow a wide communication with the artificial outlet. Abscesses situated between the bladder and cervix may be drained by anterior colpotomy.

Paravesical abscesses and those situated in the broad ligaments pointing toward the anterior abdominal wall should be incised above Poupart's ligament, analogously to the incision for ligation of the external iliac artery. Tubal and ovarian abscesses situated above the pelvic brim are to be incised and drained through the vagina by exposure through an abdominal incision under full view, to avoid injuries to the adjacent and contiguous organs. Complete extirpation of the uterus and adnexa is advisable only in those cases in which infiltration of pus into the tissues has produced an irreparable loss of the functions of the organs of reproduction. A diseased uterus, after the removal of both appendages, becomes a useless and troublesome organ and should be also removed. Pyosalpinx or ovarian abscesses associated with uterine fibroids require complete removal and should be followed by vaginal drainage.

Our aim should be to avoid abdominal drainage and to substitute vaginal drainage. We should practice conservation in the operations for diseased uterine appendages even while they are undergoing suppurative processes, both as a life-saving procedure and if possible to secure a restitutio ad integrum of the pelvic organs.

A Case of Linseed Poisoning.

Hollick in The London Lancet, reports the case of a man suffering from hemorrhoids to

which hot linseed meal poultices were applied. The man describes his symptoms as follows:

"To commence with, I experienced a peculiar sensation in the throat and mouth, as though they were lined with velvet, the throat contracting considerably; there was a scaly feeling in the skin of the hands and feet. The skin all over the body, but more particularly on the thighs and legs, went 'anserine,' having the appearance as though a small bladder of water surrounded each hair at its root; the skin changed to a color between that of red and purple; after this the irregularities on the skin became more pronounced. My face was discolored and there was a rush of blood to my head. This discoloration of skin was accompanied by irritation. My hearing was affected. I went very deaf and I was also unable to see well. My heart was beating very forcibly and rapidly and I had a strong hysterical feeling. I counted my pulse and timed it to be 120 per minute. I felt on the border of delirium. My chest seemed restricted, particularly at the lower part. These symptoms lasted about three-quarters of an hour and on diarrhea supervening they were very much mitigated. I then had an attack of vomiting, the vomit being of a dark color, although I had taken nothing but milk foods for the past 48 hours. After this the symptoms gradually passed off, the velvety feeling at the throat and mouth being the last to disappear. On two previous occasions I had been 'poisoned' by linseed. On the first occasion I was walking through a field in the east of England where laborers were engaged in the operation of stacking the linseed and I ate a few of the seeds. Within three or four hours afterward I experienced symptoms similar to those narrated above, only to a less degree. I ate about 12 seeds only and the duration of the symptoms was from two to three hours. About two years afterward I ate two lozenges of 'linseed and liquorice' and the same symptoms were again experienced."

End to End Anastomosis of the Popliteal Artery.

A. H. Ferguson in the Annals of Surgery reports a case of injury to the popliteal artery from gunshot, the vessel being completely severed. The symptoms noted were, marked swelling of the limb from the site of injury to the foot which was increasing; pallor of the foot, with darkened color near the knee, and engorgement of the superficial veins of this region; loss of function in the leg; loss of motion and sensation of the foot, up to middle portion of the leg; the foot and leg were cold to touch while he complained of them being hot and numb; pressure on calf, knee or thigh caused pain, also passive motion; diffuse pulsation in the popliteal space could be felt and seen extending above and below as well as around the knee; systolic bruit and thrill were heard and felt behind the knee. Weak, pale, anxious state of patient; pulse 132, small and weak; thirst and nausea.

The popliteal artery was exposed after applying constricting bandage, clots removed; on

loosening the tourniquet blood spurted from the proximal end of the artery, which was ligated temporarily with gauze strips, above and below the injury. The tourniquet was then removed, and the lacerated ends cut off. A clot closing the distal end was squeezed out, this showing the absence of a collateral circulation. The upper end was slipped into the lower end about a quarter of an inch and held in place by four fine silk sutures, the free margin being attached by continuous suture of same material. The temporary gauze ligatures were now removed, and the pulsation at the ankle returned at once; the pallor disappeared and the foot became warm. The leg was kept in a flexed position during the operation; a broad flap of the semi-membranosus was lapped round the side of union. The popliteal vein was intact. The leg was dressed in flexion, in plaster of paris, leaving the foot exposed.

The next day, sensation had returned to the toes and foot; skin was normal in color. Forty-one hours after operation a sudden severe shooting pain was felt in the calf. The foot changed color, and sensation disappeared. Five hours after the foot felt warmer than normal and was swollen, pain was still present and the superficial veins were engorged, the pulsation of anterior tibial artery at ankle was gone. Hot fomentations were applied to foot and ankle. The next day the foot was shrivelled, cold and sensation was gone. Dry gangrene set in from fourth to sixth day after operation, which was clearly demarcated by the ninth day. This involved toes, a strip on the sole, and a spot on the heel the size of a dollar, and several small areas on the outer side of the foot and ankle.

No constitutional symptoms of any severity arising and the patient growing stronger, operative treatment was deferred till the thirty-first day after the injury, when the toes and ends of the metatarsal bones were removed, as also the patch on the sole and heel; the parts being left to granulate over. This did not take place, but the tissue necrosed down to the bones, necessitating another operation, which was done on the fifty-first day after the injury, the foot being removed at the metatarsal joint. The wound healed kindly. Contraction of the scar tissue at the popliteal space necessitated its removal, which was successfully done, the artery pulsating above, below and at the site of anastomosis. The patient is following his occupation. The author could find no recorded case of anastomosis done on the popliteal artery.

Tetanus.

A. A. Matthews, in the Maryland Medical Journal says: Moschowitz collected 290 cases treated by subcutaneous injection of antitoxin, of which 173 recovered and 117 died, a mortality of 40.33 per cent, and 48 cases treated by intracerebral injection, of which 23 recovered and 25 died, a mortality of 52.08 per cent.

There is no definite rule about the severity of cases. The attack may begin after a few

hours to a few days—say one or two days. These are the most severe cases, and practically always fatal. After a patient goes eight or ten days and then the symptoms begin, they are usually mild, progressing slowly in the same way. But if the symptoms progress rapidly it is a bad omen, even though a week or more has passed since infection.

Cases have been known to develop as late as eight weeks after the infection, but these are very uncommon, and it would be surprising if many such cases should be treated as neuralgia or what not, for in this form only a certain muscle or group of muscles is affected.

Up to within the last decade the treatment of the tetanus has been purely symptomatic and the mortality about 90 per cent. This percentage has been greatly reduced by the antitoxin treatment. It is now about 40 per cent.

The first thing one should do is to try to destroy the bacteria at the seat of infection and prevent further production of the toxins, as in the great majority of cases the bacillus remains at the seat of infection. The wound should be thoroughly cleansed and exposed to the air by freely opening it and removing all foreign bodies. The next step is to disinfect the part by soaking it in a bichlorid solution, 1-1000.

The toxins should be eliminated from the body as much as possible by cathartics, diuretics, and diaphoretics, the latter not often necessary, for the patients usually sweat profusely.

The antitoxin is essential and it should be given very early, for it causes the unaffected nerve cells to acquire an immunity. The nerve cells which have been affected by the toxin will not be restored by antitoxin.

Regeneration and Inflammation.

R. Langerhans, in The Post-Graduate, explains the difference between fatty degeneration, fatty infiltration, fat retention, and fatty metamorphosis. He further takes up the subject of regeneration, which may be either pathologic or physiologic, and describes how these come about in the different tissues, e. g., in the bone. Transplantation is considered a species of regeneration. The subject of inflammation is taken up at great length. He says "a local disturbance of nutrition, distinguished from other nutritive disturbances by the intensity of the changes, rapidity of course, and character of changes." The writer explains the presence of rubor, calor and dolor, and then discusses parenchymatous, interstitial and exudative inflammation. It is a good article.

Retroduodenal Choledochotomy.

Berg, in the Annals of Surgery, suggests a retroduodenal route for access to the retroduodenal and papillary portions of the common bile-duct. Such a method of approach necessarily demands a mobilization of the descending portion of the duodenum sufficiently to permit of its rotation to the left around a long-

itudinal axis passing through its inner border. The feasibility of such mobilization and reflection of this portion of the duodenum in the living subject has been demonstrated by Koehler, who has employed it in five cases for the purposes of gastroduodenostomy (*Centralblatt für Chirurgie*, 1903, No. 2.)

He has had no opportunity to test the value of the retroduodenal and papillary portions of the common bile-duct in the living subject, but he has been able to test its practicability upon the cadaver. It was especially noted that the posterior parietal peritoneum in this region and the descending portions of the duodenum are very loosely attached to the abdominal wall, and that their separation from the posterior parietes and the reflection inward of the duodenum are very easily accomplished. No vessels of any importance were encountered. The pancreaticoduodenal arteries lie about one-quarter of an inch anterior to the duet, and run in a course parallel to it. A small vein was noticed to cross the duet just before its entrance into the duodenum. Exposure of the entire retroduodenal and papillary portions of the duet was excellent, and manipulations with it were easily carried out.

The steps in the operation of retroduodenal choledochotomy are as follows:

A small, round, hard cushion should be placed under the lower dorsal region of the patient. This throws the posterior abdominal parietes forward and renders more accessible the descending duodenum, common bile and cystic ducts.

1. Abdominal incision through the right rectus muscle extending from the costal arch to the umbilicus.

2. Free exposure of the descending portion of the duodenum; all surrounding adhesions are freely separated, or when vascular, divided between two ligatures. The liver is drawn upward by a broad retractor, the stomach pushed over to the left, and the transverse colon downward by gauze compresses and held away by the assistant.

3. Mobilization of the descending duodenum. Three or four centimeters external to the right border of the duodenum the posterior parietal peritoneum is incised in a longitudinal direction from the flexus of the duodenum above to the transverse mesocolon below.

With the finger the internal or left portion of the divided peritoneum is elevated from the parietes up to the right duodenal border; the finger then passes behind the duodenum, gently separating it up to its inner border, from the vertebrae, inferior cava, and aorta. The duodenum is now only loosely fixed at its flexure above, at the transverse mesocolon below, and along its inner concave margin, and is easily rotated to the left around a longitudinal axis passing through its inner margin. This rotation brings its posterior surface and the retroduodenal and papillary portions of the common duet anteriorly, and affords an excellent exposure of these parts.

The duet is easily recognized; it can be

grasped between the fingers, incised, and carefully impacted in it removed.

4. The site of incision into the duet should be covered by a narrow wick of gauze and the descending duodenum allowed to fall back into its original position. If it is necessary to drain the common bile and hepatic ducts, the common duet is incised in its free portion in the gastrohepatic ligament, and a drainage tube inserted into this opening. The incision into the retroduodenal portion of the duet can be easily sutured, though this should not be necessary.

Upon the cadaver the operation appears to be an eminently satisfactory method of access to the retroduodenal and papillary portions of the choledochus.

Intussusception, With Special Reference to Relapse.

M'Gregor (*Glasgow Medical Journal*) has collected from two hospitals in Glasgow the reports of sixty-four cases of intussusception treated by enemata and operation, of which forty-two died. Of these twenty-seven died of shock, leaving fifteen whose deaths were attributed to other causes. Of the specified other causes, peritonitis accounted for three, gangrene of the bowel for two, asthenia for one, and "refused operation" for another. This leaves eight cases, in one of which the post-mortem report states that the obstruction was not relieved; in the other seven, the symptoms prior to death seemed to show that recurrence had taken place. Adding three cases to these, in which both the primary intussusception and the recurrence were treated successfully, the proportion of relapses is raised to eleven out of sixty-four.

He says that relapse is a common cause of death after reduction of the intussusception, and that it frequently has been overlooked; hence he feels that some change in the operative treatment is advisable. He employed the following method in one case, which was cured without recurrence:

After reduction of the intussusception, a long catgut thread was fixed in a point of the mesentery, proximal to the intussuscepted portion, half-way between the bowel and the root of the mesentery. Thence a continuous Lembert's suture was applied so as to form a fold, produced by approximating the distal and proximal edges of the mesentery. The fold was gradually increased from the commencement of the suture to a point opposite the apex of the intussusception, and was then gradually diminished to a point distal to the lowest point of the lesion.

By this method the blood-vessels of the mesentery are not interfered with, the sutures only involving the peritoneum, and no loop-hole is left for an internal hernia. It has the advantage of not requiring new apparatus, and need not increase the time of operation by more than five minutes. The effect of this procedure seems to be two-fold. In the first place, the shortening of the mesentery removes one of the common predisposing causes, and

secondly, the three-ply fold of mesentery may act as a splint and so prevent the doubling in of the bowel at the site of the old lesion.

Acute Tetanus Successfully Treated With Antitoxin.

Mackinnon (Australasian Medical Gazette) has treated two cases with Antitoxin. One patient, a 39-year-old male, developed symptoms three days after the receipt of a wound in the forefinger; the other patient, a boy aged nine, developed the symptoms thirty-six hours after receiving a scald of the foot. In the discharge from the wounds tetanus bacilli were demonstrated microscopically. The patients were treated with tetanus antitoxin, morphine, hyoscine, bromides, chloral and inhalations of chloroform. The antitetanus was administered every second day, in doses of five cubic centimeters, to the child. The man did not come under observation until the fifth day of the disease, but during the following five days, four hypodermic injections, containing ten cubic centimeters of antitoxin, were administered. The wounds in both cases were curetted and dressed with gauze saturated in 1:150 carbolic solution. Both patients had a gradual convalescence and finally recovered.

Suprapubic Removal of the Prostate and Prostatic Urethra for Senile Enlargement.

Moynihan, (Annals of Surgery) reports a series of twelve cases of this operation. The first case performed in 1901, was to a certain extent accidental, as it was not the intention of the operator to remove the prostatic urethra, and on finding this structure in the removed gland he was somewhat alarmed for the ultimate result. In five weeks the patient was, and still is, able to pass the urine in a natural manner, and suffered no ill consequences whatsoever.

This method has been followed in twelve cases, with one death, in a patient aged 65 years, very feeble and from whom at the same operation a large stone was removed. In the other eleven cases the symptoms were relieved completely and healing occurred on the average about the fifth week. The author operates with a rubber glove on the right hand, leaving the left uncovered. After opening the bladder suprapubically, the two sides of the opening are stitched to the abdominal wall with two long silkworm gut sutures which are allowed to remain in until the fourth day. The left forefinger is then introduced into the bladder and a nick is made in the trigone immediately behind the internal urethral meatus. The finger tip gradually loosens the mucous membrane beginning at this small opening. Two fingers of the right (gloved) hand are then introduced into the rectum with the thumb pressed firmly into the perineum, in order to bring the prostate into a firm grip while the stripping is being accomplished by the left forefinger. The enucleation is usually accomplished in from two to five minutes. A catheter is now passed and the bladder flushed

with a hot - per cent carbolic acid solution. After the fluid returns clear a large rubber tube is passed into the bladder and a couple of stitches introduced into the wound. On the fourth day the tube is removed and the patient allowed to sit up with the bed rest. A catheter is passed on each succeeding day until the seventh, when it is tied in. The bladder is flushed daily through the suprapubic. The average age of the twelve patients was 65 years, the elder being 73 and the youngest 56 years.

Sufferers from senile prostatic enlargement are almost invariably poor subjects for operation, yet recovery after operation is usually rapid and remarkable. An important point to be remembered is not to keep these old patients too long in bed; they should be allowed to sit up within two or three days after the operation.

The Early Diagnosis of Acute Intestinal Obstruction.

W. Hale White, in the London Lancet, March 19, describes the difficulty of diagnosis between certain cases of obstruction and acute appendicitis. Generally, appendicitis is mistaken for obstruction, but not of the most acute variety. It is not rare for a mistake to be made between acute general peritonitis and intestinal obstruction, and this is not surprising, for strangulation of the bowel renders possible the passage of bacteria through it, and therefore many cases of acute obstruction quickly become complicated by acute peritonitis; hence, it follows that the difficulty of diagnosis is often less, the earlier the case is seen. Speaking generally, absence of fever and of leucocytosis indicates obstruction; so also rapid abdominal distention, especially if peristalsis can be noted in the intestinal coils; early and urgent vomiting quickly becoming stercoraceous is in favor of obstruction; the pain is often paroxysmal in obstruction, the abdomen is not board-like or very tender, and there is no cutaneous hypæsthesia; the patient does not lie in the usual attitude of peritonitis but may bend forward, doubled up by the pain, and the abdomen moves with respiration until later in the disease than is the case with acute peritonitis. But it is essential to bear in mind that every one of these symptoms which have been mentioned as generally indicating obstruction may be met with in peritonitis in which there may be complete absence of the passage of faeces and flatus by the bowel. Volvulus is the form of intestinal obstruction which most resembles acute peritonitis. Other conditions mistaken for intestinal obstruction are acute hemorrhagic pancreatitis, perforation or rupture of any hollow viscus, thrombosis and embolism of the mesenteric twisted pedicle of pelvic tumor, and hysteria. In regard to operation, it should be remembered that the early symptoms of acute intestinal obstruction are caused by strangulation of the bowel and not by its obstruction. Usually speaking, there are no acute symp-

toms unless there is strangulation and the symptoms of this are sudden, agonizing pain, often paroxysmal, referred to the umbilicus, frequent, early, distressful, and severe vomiting, a rapid, feeble pulse, an ashy, pinched countenance, a normal or subnormal temperature, and collapse. If there is great and rapid distension in addition to symptoms of strangulation, we infer a volvulus; if there is history of chronic obstruction—e. g. that due to malignant growth in the large intestine—the distended bowel behind the obstruction has become kinked or strangulated in some way; there may be other evidence of intussusception; or if, as is usually the case, we decide none of these are present and there is no external hernia, then, arguing from the experience of the post-mortem room, we learn that the small intestine is almost certainly the seat of the strangulation, but we cannot from the foregoing locate the exact site of the trouble.

The Agglutination of the Pneumococcus With Normal and Immune Sera.

Wadsworth in the *Journal of Medical Research*, describes a method he has adopted in the course of some experience on pneumococcus infection in the immunised rabbit to obtain some criterion of the degree of immunisation developed in the animal. A pepton broth made from meat infusion, carefully neutralized before boiling, and allowed to stand and absorb oxygen, was found to be the best medium for the growth of pneumococcus. In a flask containing 200 c.c. the maximum growth is usually reached in from 24 to 36 hours. At this stage the culture is centrifugalized, clear fluid decanted, and the sediment shaken with about 15 c.c. per cent. salt solution. The few clumps broken up sink rapidly, leaving a dense, finely-divided suspension of pneumococcus cells less than 48 hours old. Dilutions with the sera to be studied may then be made in small slender tubes, and observed from 12 to 18 hours at 37 degrees C. The more marked reactions may be complete in five or six hours or less, but 12 or more hours are often required to bring out the more delicate tests. He has studied the agglutination of the pneumococcus in the blood serum from various normal animals and from a large number of specially immunised rabbits. The normal serum of the rabbit always failed to agglutinate the pneumococcus cells. The normal blood sera of cats and dogs also failed to agglutinate. Aseptic fluids failed to agglutinate in dilutions of 1 to 15; but normal human sera gave reactions in dilution up to 1 in 10 in less than 18 hours; 1 to 30 failed to agglutinate dilutions. He mentions some experiments on the agglutinative action of the blood serum from pneumonia patients on pneumococci, the agglutinative action of streptococcus serum on pneumococci; also some investigation of the pneumococcus precipitin reaction. He suggests the following conclusions: (1) That peculiar growth phenomena occurring in pneu-

mococcus cultures in serum are not reliable tests of the presence of agglutinins or other adaptive substances. (2) That the presence of these substances in very active sera may be demonstrated by the usual agglutination methods, but that as a delicate or practical routine procedure this method was a failure, (3) That by concentrating the pneumococcus cells in an isotonic solution, as by centrifugalising broth cultures and shaking the sediments with a small quantity of salt solution, a practical and accurate method is available for the precise study of the pneumococcus agglutination reaction. (4) That by this method an agglutinative action, heretofore not detected, has been demonstrated in the blood serum of various normal animals and in certain specifically immune sera. (5) That it has been possible to obtain the pneumococcus precipitin reaction not only with cultures cleared by normal bile, as did Neufeld, but with filtered salt solution extracts of the pneumococcus cell. (6) Finally, that precipitin reactions, heretofore not described, have been demonstrated with the blood serum of various normal animals and with certain immune sera.

Pneumococcic Arthritis.

Howard in the *Johns Hopkins Hospital Bulletin*, reports three cases. He believes that lobar pneumonia is not a purely local disease of the lungs, but a general acute infection. The first case was that of a male, aet. 42 years, admitted to hospital on the fourth day of the disease, complaining of fever. On admission he was found to have some slight signs of acute lobar pneumonia on the right middle lobe. On the seventh day he developed pericarditis, and some arthritis of the right shoulder joint. On the tenth day some arthritis of the right ankle joint appeared. Aspiration of the joint on the next day yielded 2 c.c. of turbid fluid, in which typical pneumococci were found both in smear preparation and in cultures. Post-mortem examination revealed very extensive lesions, including peri-, endo- and myocarditis, as well as meningitis and the arthritis. The second case was that of a male, aged 79, admitted on the third day of the disease with lobar pneumonia. He developed arthritis of the left shoulder joint on the seventh day, of the right knee joint on the eighth day, left knee on the ninth day, and he died on the same day. Post-mortem, the pneumonia was confined to a small area at the apex of the right upper lobe. The left shoulder and right knee-joint contained a large amount of purulent fluid, smears from which showed capsulated diplococci. The left knee-joint showed only a small amount of clear fluid post-mortem. The third case was that of a woman, aet. 69 years, who was transferred from the insane pavilion to the hospital, on account of heart disease and pneumonia. Some arthritis of the right knee developed on the same day as the pneumonia. The pneumonic consolidation only involved a small area at the apex

of the right lung. The fluid from the knee-joint showed the presence of the typical encapsulated pneumococci.

Injury to Health While in School.

Drummond (Scottish Med. and Surg. Jour.) discusses in an interesting way the various factors in school life which may injure health. The author finds them in unsanitary arrangements of the school room; insufficient knowledge of hygiene on the part of the teacher; too much school work, and worry, excitement and fatigue. There can be little doubt that many pupils are overworked. Worry is very common in school children and stands in a causative relation to ill health. This is heightened by the rigid discipline of school life. During puberty the girls should avoid all unnecessary exercise, as all the strength is needed for their physiologic functions.

Movable Kidney.

Rufus B. Hall (Am. Jour. of Obst.) states that quite a large proportion develop hydro—or pyonephrosis, and in a few, complete obstruction. Many of these cases suffer more or less discomfort in the region of the displaced kidney. The pain, which is of a burning, dragging character, is not severe enough to necessitate an anodyne, yet is a source of great discomfort and annoyance. The pain is often constant so long as the patient is in the upright position, but is very frequently relieved by a recumbent position. Fixation gives these patients relief. He states that these cases should be operated upon before a hydronephrosis may develop, as the gradually increasing curvature of the ureter with its obstructive function of the kidney and may even eventually produce atrophy and cystic degeneration. The urine being unable to escape, it distends the pelvis and calices, causing destruction of the tubules and the Malpighian tufts, and terminates in a cyst, the walls of which are composed of the pelvis and the capsule of the kidney. During the acute attacks, the examination of the urine will reveal more or less pus present; but this will almost entirely disappear three or four days after the attack has subsided. Thus examination of the urine between attacks may cause a faulty diagnosis. The operation of relief of this condition, is almost devoid of danger; and, if it is performed before serious pathological changes have taken place in the organ, relief is immediate and permanent.

A Study of the Antagonistic Action of Poison.

T. Sollman (Am. Jour. of Physiol.) has studied the simultaneous action of pilocarpine and atropine in the developing embryos of the sea-urchin and starfish. A. P.

Matthews had found that the development of the latter is hastened by pilocarpine and retarded by atropine. The advantage of studying the effect of the simultaneous action of the two drugs in these simple organisms in which the effect is a plain one and can be easily observed, is apparent. The author found that while small doses of pilocarpine hastens the developments of the embryos, larger doses or a prolongation of the action, produce the opposite result. Small doses of atropine have no effect, but larger doses hinder development. When both drugs are used, there may be antagonism or synergism, according to the conditions; but the depressant action always tends to predominate. The observed resultant is always below the mathematical average. Even with the best antagonism, both poisons are producing their action, as shown, for instance, by the greater liability of the protoplasm to depression. Stimulation can be readily and completely removed by very small doses of a depressant (even by doses which are inactive when used alone). Depression is lessened by only a limited range of doses of the stimulant. Its removal is in no case complete. This gives to stimulation a limited but distinct usefulness. The optimum dose of the stimulant is smaller when the embryos are depressed than when they are normal. Larger doses are synergistic to the depressant, and hence harmful. The dose of the stimulant must therefore be chosen smaller, when depression exists, than in normal specimens.

Modification of Porro's Operation.

William H. Horrocks (Brit. Med. Jour., Feb. 13, 1904) mentions some changes in the technic of this operation, which is upon the lines sometimes employed in the treatment of uterine fibroid. In considering the choice of operations between the Cæsarean section and Porro's operation, there are certain points in favor of the latter technic. In general one or the other of these operations is indicated when the deformity of the pelvis is so great as to render delivery without craniotomy impossible and where some tumor growing from the cervix or sacrum blocks the pelvic cavity. The question of leaving the uterus has always seemed a doubtful point, although cases have been recorded by French surgeons in which several operations have been performed upon the same woman. Of late it has been customary in performing Cæsarean section to sterilize the woman by dividing the Fallopian tubes. If this be done, the settlement of the question resolves itself into a determination as to whether more shock is produced by the removal of the uterus or by its simple section, suture and destruction of

the Fallopian tubes. The technic of the author's modification is as follows: Before drawing the uterus out, it may be necessary to ligate the broad ligaments on each side and divide them. After delivery of the uterus through the wound, the peritoneum is stripped off until the neck of the uterus is reached by the finger. The uterine artery is found on each side, and a ligature thrown around it, one side only being tied. The anterior wall of the uterus is now exposed and the muscular tissue torn through with a blunt director down to the membrane. These are now opened sufficiently so as to easily remove the child. As soon as natural respiration is established, the cord is clamped, divided, and the child delivered. The cord, with the forceps is now returned into the uterine cavity, no attempt being made to remove the placenta or the membranes. A flat sponge is packed into the uterine cavity and the opening drawn together. The second ligature is now tightened and the uterus divided as low as possible. The stump is then ligatured with a double set of sutures. A sound should be passed into the bladder to determine its position before attempting to perform the uterine stump. The pelvis is now carefully dried and drainage may or may not be established through Douglas pouch. The special point in this operation is the small amount of shock due to the infinitesimal hemorrhage. The question of tightening the second ligature on the uterine artery before extracting the child is as yet not positively answered.

Fibroid Disease in Five Sisters.

J. MacPherson Lawrie (Brit. Med. Jour., Feb. 13, 1904) gives the history of these interesting cases. The pathology of fibromyomata is as little known as that of tumors in general. With regard to cataracts, it is known that impairment of nutrition of the lens increases with advancing age, and that these nutritive defects are apt to manifest themselves earlier in some families than in others. In other words, there is an inherited predisposition to that failure of repair which leads to the formation of opacities in the lens; this form of cataract, however, not being always an expression of senility. Is hereditary influence a factor in the causation of uterine fibroids? Is it possible that these two apparently dissimilar diseases are the resultant symptoms of some unknown underlying cause? The only connection between the uterus and the lens of the eye is a developmental one. The capsule of the lens originates from the same layers of the blastoderm as the uterus. The lens is mainly the offspring of mesoblastic elements and therefore in direct histologi-

cal relation with muscular and vascular tissues. It seems, therefore, that the relation of cataract to fibroid in this family is either purely accidental, or else of such a profoundly obscure origin as to be extremely hypothetical. This remarkable series, would seem to furnish evidence to justify the suspicion that hereditary influence may be a causative factor in the pathogenesis of uterine fibroid tumors. The literature of the subject shows that the majority of writers do not ascribe any importance to the theory of hereditary transmission. The author is frank in stating that he believes this series to have its explanation in coincidence rather than in the expression of any hereditary tendency. This is a conclusion which is very tenable in view of the computation of Klob, who believed that four women in every ten have fibroids.

Aseptic Vaccination.

Sajous in the *Monthly Cyclopaedia of Practical Medicine*, gives some recent statistics from Germany and Porto Rico in reference to the efficacy of general enforced vaccination. He regrets to observe the laxity in this regard prevalent in the United States, where during the last six months of 1903, 13,739 cases of small-pox are reported as against 14 for the same period in Germany.

Notwithstanding the convincing evidence of a century of facts, there exists a popular prejudice against vaccination, due to dread of inoculation, with the virus, of systemic poisons through the "sore arm" of former days.

The glycerinated calf-lymph, now in common use, should eliminate all grounds for apprehension, because glycerine is a potent germicide, capable of destroying all contaminating pathogenic bacteria without interfering with the action of the vaccine.

Moreover, the dilution of the lymph with glycerine and sterile water reduces the quantity of lymph used in a single vaccination to one-fiftieth of the amount required of dry lymph.

A third factor, worthy of consideration is the protective influence of vaccination against diseases other than small-pox, which some observers believe to exist. At any rate, no germ is introduced into the body by a properly prepared and kept glycerinated vaccine, used under aseptic conditions. We are merely using a minute dose of an agent capable of calling into inordinate activity all the protective functions of the organism. Rosenau, of the Marine Hospital service, has shown that the dry points contain large numbers of bacteria and that the glycerinated tubes may

also, if the virus is not glycerinated a sufficient time before being sold.

Howard and Weir, of the City Bacteriological Laboratory of Cleveland, continuing these investigations, found most of the glycerinated lymph remarkably free from bacteria.

The Therapeutic Value of Musk.

Crookshank (*West London Medical Journal*). It appears from considerable experience that musk is of benefit, not in every severe case of acute specific infection, but when the symptoms are chiefly due to the intense action of toxins on the central nervous system and when death appears likely from the destruction of the functions of the medulla oblongata. It is of no use to give musk, as it has been known to be given, in typhoid fever with perforation, hemorrhage, or pneumonia; it is of little use in the septic kinds of scarlet fever; and it is not called for in diphtheria when antitoxin has failed to abate the local spread of the disease; but the writer believes it to be an unrivaled drug in pure cases of acute specific toxemia with especial incidence of the poison on the central nervous system.

Musk is said to be 'the dried secretion from the preputial follicle of *Moschus moschiferus*,' and is described as occurring in 'irregular brownish grains contained in an oval sac about two inches in diameter, smooth on one side, and covered on the other, outer side, with bristle-like hairs arranged concentrically around a central orifice.' *Moschus moschiferus* is the true, or Chinese, musk-deer, and is found only in Central Asia.

The "oval sacs" commercially known as "pods" are, we are told, the perputial folds as removed by native hunters. These pods arrive in England through the Chinese trade, packed by twenties in carved wooden "caddies." On account of their considerable value the pods are entrusted by the firms to which they are consigned or sold to responsible persons for preparation, and these persons have to account very strictly for the quantity given them. The pods are opened with fine scissors, and the large grains are shaken out and carefully collected. These large grains represent the highest grade of musk. Next, the pods are stretched out and carefully scraped with a fine knife. These scrapings constitute the second grade of commercial musk. Lastly, the pods themselves are finely chopped or minced, providing thus the third grade of musk, used we are told by the perfumers in "fixing" perfumes.

On account of the high commercial value (\$25 a drachm) of the best musk, there is obviously great temptation for the

sale, in substitution, of the second and third grades.

It is the best musk only that should be used therapeutically. It must be given in adequate doses (5 grains every two hours is not too much), for the effect is transitory, owing, it is supposed, to the rapid destruction or physiological neutralization in the body of the active principle.

It is difficult to explain the therapeutic value of musk, but one may suppose that the volatile aromatic substance, which, although of unknown chemical constitution, is believed to be the active principle, has, when conveyed by the blood stream, an action on the nerve cells of the lower brain, either directly stimulant or else antagonistic to the products of the specific microbes; or it may be that the active principle of musk has some power of directly fixing or rendering inert bacterial toxins—that it is, in fact, a natural and non-specific antitoxin.

If musk is to be usefully employed it should be given only in the class of cases indicated, and must be of the finest quality; it must be given at frequent intervals, and by a hand that is not niggardly in either a therapeutic or financial sense.

Miscellaneous.

Examination Questions.

The following are the questions asked by the members of the Board of Examiners of the State of North Carolina, at their meeting in Raleigh, May 18-21, 1904:

Physiology and Hygiene—By M. H. Fletcher, M. D., Asheville, N. C.

1. Give histological structure of Blood. What are its functions?
2. Describe briefly the Lymphatic System?
3. Describe the Salivary Glands; give anatomical relations; Nerve supply; name their ducts?
4. What type of a Gland is the Kidney? Describe a Malpighian Body?
5. Describe the Thyroid Glands? Give function of the Thyroids and Parathyroids?
6. Name the classes of substances which all food stuffs contain? What are Proteids?
7. Name products removed from the system by Bile? As a digestive secretion what are its most important functions?
8. Give origin, course and distribution of the Tenth Cranial or Pneumogastric Nerve? Effects of section of both Vagi Nerves?
9. (a.) What are the effects of Paralysis of the Seventh Cranial Nerve on the special senses of sight, smell and taste? (b.) Name the internal layer of the Retina?
10. Define Disinfectants, Antiseptics,

Deodorants, and name the principal ones of each class.

Chemistry—By Geo. W. Pressly, M. D., Charlotte, N. C.

1. Give the composition of the atmosphere?
2. What is meant by the boiling-point of a liquid?
3. Give symbol and atomic weight of Calcium; Carbon: Phosphorus and Sulphur?
4. Give formula for Nitrate of Silver; for Glycerin?
5. How is Chloroform tested for Impurities?
6. Give a test for Bile in the Urine?
7. What is the chemical nature of Urinary Calculi?
8. Convert one Kilogram to Lbs. Avordupois?
9. What is Green Soap?
10. What is the specific gravity of pure Ether?

Obstetrics, Gynecology and Diseases of Children—By Chas. O'H. Laughinghouse, M. D., Greenville, N. C.

- Obstetrics.—1. Give Indications for Forceps?
2. Give Indications for version?
 3. Give Varieties of Placenta Prævia.
 4. Define Hourglass Contraction?
- Gynecology.—1. Give Indications for Curetting the Uterus?
2. Give causes for Amenorrhœa?
 3. Give Diagnosis of Carcinoma of Uterus?
- Diseases of Children.—1. Give Varieties of Stomatitis?
2. Give etiology of Enuresis?
 3. Give Sequelæ of Measles?

Practice of Medicine.—By A. A. Kent, M. D., Lenoir, N. C.

1. What is the duration of the period of incubation in Diphtheria, Parotitis, Rubella, Scarlatina, Typhoid Fever, Variola?
2. How soon after recovery, counting from first day of attack, would it be safe to the public to allow a patient recovering from Scarlatina, Rubella, Diphtheria, or Variola to go out of quarantine and what preventive measures would be necessary?
3. Name the best means of disinfecting the dejecta in Typhoid Fever and state how long its use should be continued, counting from first day of attack?
4. Explain briefly, giving cause, the difference in Quotidian, Tertian and Quartan Intermittent Fever?
5. Write a single prescription for Acute Coryza? One for Hysteria?
6. Define Aneurism and Arterio-sclerosis.

7. Define Aphasia and give the lesions which cause it?

8. Name the point of maximum intensity and sound of heart with which you will hear the murmur (1) Aortic Stenosis, (2) Aortic Regurgitation, (3) Mitral Stenosis, (4) Mitral Regurgitation, (5) Tricuspid Regurgitation?

9. Define Gastralgia and write a single prescription for it.

10. Give diagnosis of the following case: Young man has been exposed to cold, onset sudden, chilliness, some nausea and vomiting, headache, restlessness, muscular twitching, pain and tenderness in the lumbar region, dyspnoea, pulse slow, hard and tense, temperature 102 degrees not constant, pallor and puffiness of eyelids and face, soon a swelling about the ankles and legs, urine scanty, smoky-red color, acid, specific gravity 1025, on boiling a thick, curdy precipitate forms?

Answer the questions briefly and to the point, but do not write everything you can think of about the diseases named.

Surgery.—By Frank H. Russell, M. D., Wilmington, N. C.

1. (a) Define a Fistula? (b) A Sinus? (c) Treatment?
 2. Give the symptoms of Septicæmia?
 3. Give symptoms and treatment of Osteo-Myelitis of the Tibia?
 4. What first aid would you render a patient who had received the following injuries: (a) Incised wound of the scalp? (2) Compound fracture of both bones of the leg—bleeding freely.
 5. Give symptoms and treatment of fracture of Clavicle?
 6. Give symptoms of Carcinoma of Breast?
 7. Give symptoms of Carcinoma of Uterus?
 8. Give symptoms of Internal hemorrhage?
 9. Give differential diagnosis of Hydrocele—Treatment?
 10. Give in detail the method of performing Tracheotomy.
- Anatomy*.—By James M. Parrott, M. D., Kinston, N. C.
1. Describe the upper extremity of the Ulna bone?
 2. Describe the lower extremity of the Tibia bone?
 3. Describe the superficial Palma Arch and give its relations?
 4. Name the coverings of a complete indirect inguinal hernia?
 5. Name the structures divided in an amputation through the middle third of the thigh and give the relations of the blood vessels at this point?

6. Through what structures would you cut in operating for appendicitis, the site of the incision being midway between the Anterior Superior Spinous process of the ilium and the umbilicus; name the structures in the order in which they are divided?

7. Give the relations of the gall bladder and name its surgical landmark?

8. Give the boundaries of the Superior Carotid Triangle ("triangle of election") and name its contents?

9. (a) Describe the Fissure of Sylvius?
(b) Locate Broca's convolution (the inferior frontal convolution)?

10. What muscles or group of muscles are supplied by (1) the Musculo-Spiral nerve and its branches? (2) Posterior Tibial nerve and its branches?

11. Give the boundaries of the Ischio-rectal Fossa and describe its contents.

Pledge.

N. B.—Answer eight questions only.

Mat. Med. and Therapeutics.—By J. T. F. Battle, M. D., Greensboro, N. C.

1. Give therapeutic uses of quinine. Explain its action in Malaria and when it should be administered for its best effect?

2. Give dose of Arsenious Acid; its effect upon the system; therapeutic uses treatment in cases of poisoning?

3. Mention four preparations of Opium, and two Alkaloids: dose of each; its physiological effect; symptoms and treatment of toxic dose?

4. State the physiological actions of the Bromides; dose of five preparations, therapeutic uses?

5. How does Iodine effect the system? Mention four preparations, and its therapeutic uses?

6. What is the common name for Veratrum Viride? Mention the preparations and dose of each, physiological actions and therapeutic uses?

7. What are the physiological actions of Iron and its medicinal uses.

8. Give dose, physiological actions and therapeutic uses of salicylic acid?

9. Name the ingredients composing the following: Seidlitz Powder, Black Wash, Tartar Emetic, Carron Oil, Bashan's Mixture, C. C. Pills, Donovan's Solution, Fowler's Solution? Give common name for each of the following: Ferri Sulphas, Liq. Am. Acet., Gossypium, Oleum Tigllii, Massa Cerulii, Oleum Terebinthinæ, Potassii Nitras?

10. What is an Hypnotic? Sudorific? Collyrium? Clyster? Hæmostatic? Anodyne? Astringent? Galactagogue? Rubefacient? Emenagogue? Antiseptic? Mention one of each?

Good and Seasonable.

A word about some remedial preparations which the busy practitioner will find always useful, particularly at this season of the year, will no doubt be of interest.

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We cannot overlook our old friend the antikamnia and codeine tablet. The efficacy of this tablet in neuroses of the larynx is well known, but do all of our Doctor friends know that it is especially useful in dysmenorrhœa, utero-ovarian pain and pain in general caused by suppressed or irregular menses? This tablet controls the pain of these disorders in the shortest time and by the most natural and economic method. The synergetic action of these drugs is ideal, for not only are their sedative and analgesic properties unsurpassed, but they are followed by no unpleasant after-effects.

"Bilious" Attacks, or Acute Intestinal Auto-toxemia.

Luff, the London authority on gout, describes this disease as a "metabolic auto-toxemia, both intestinal and hepatic, which is usually followed by a deposit of sodium biurate in the joints and tissues." The individual predisposed to gout reacts differently to such various agencies as climate, food, etc.

Indigestion plays a greater role as a causative factor in the production of those symptoms attributed to excess of uric acid than is generally believed: urates, however, being merely an indication, and not the essential cause of gout. The lithæmic manifestations so often attributed to disturbance of the nervous system, are primarily due to interference with normal digestion; or rather, the nervous strain, worry and anxiety from

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any cause gives rise to indigestion, and in turn to gouty manifestations in some form. We have all noted attacks of gout, migraine, hay asthma, or some of the protena phases of disease betrayed by the presence of an excess of uric acid, coming on after an attack of acute indigestion.

A large class of patients are troubled more or less frequently with a migraine and intestinal auto-intoxication which is not of necessity followed or preceded by gouty deposits in the articulations, although such attacks are followed by heavy deposits of urates and phosphates in the urine, these deposits being the measure of the destructive metabolism of the nucleins of the body cells, chiefly of the leukocytes, in response to the invasions of poisons or toxins. As most of the toxins setting up this destructive metabolism and consequent uric acid production are of intestinal origin, diet in gout should be regulated solely with regard to the diminution of intestinal fermentation and putrefaction.

This form of the gouty manifestation is especially frequent with highly nervous and very active mental workers, and also amongst certain women. It usually occurs after undue excitement, worry, or excesses of the table, especially if the food contents of the stomach are much diluted with cer-

tain kinds of malt liquors or wines. Lager beer, however, I find generally tolerated and even beneficial to this class of patients.

Usually the premonitory symptoms of a "bilious attack" are felt on rising in the morning; there is great lassitude, muscular relaxation, want of enthusiasm; a heavy, stiff feeling of the eyeballs, and as the day advances; nausea, severe migraine, culminating in complete exhaustion, vomiting, slow pulse, cold extremities, etc.

The role of the liver in this auto-toxemia is a negative one, being inability to perform its chief normal function as a "poison filter" and to absorb or transform into harmless excretory substances, the excess of toxins brought to it by the portal vein.

The paroxysms of pain in the head in some cases are so violent that something has to be attempted to give immediate relief, but hitherto I have found purgatives, effervescent sedatives, antipyretics, hypnotics, anodynes and drugs such as colchicine, citrate of potash, etc., ineffective to arrest these conditions, until the gradual elimination of the toxins takes place, which requires from twelve to twenty-four hours. One of the great difficulties in these cases is that remedies are usually vomited immediately. I have recently been most successful with colchi-sal capsules in two very se-

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An Application in Painful Metritis.

- R Camphor 1 gram
 Salol 1 gram
 Betul-ol (Methyl-Oleo-Salicy. Comp)
 2 grams
 Chloralhydrate 50 centigrams
 M. et. ft. applic.

This is an antiseptic treatment which is easily applied on dilating the cervical cavity. Hot injections of 1 per cent. of Hux-Sal are recommended to thoroughly cleanse the parts before this application.

We call the attention of our readers to the advertisement of the Robinson-Pettet Co., Louisville, Ky., which will be found on another page of this issue. This house was

established fifty years ago, and enjoys a widespread reputation as manufacturers of high character. We do not hesitate to endorse their preparations as being all they claim for them.

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In cases where inflammatory conditions call for the use of a medicated tampon, the following will be found most satisfactory and free from danger or objections.

- R Pulv. Alum. 30 grams
 Hux-sal 2 grams
 Glycerini 300 grams
 Aquæ 200 grams
 Misce

Sig. Tse to moist vaginal tampons.

vere cases which had previously baffled all my efforts to give prompt relief during similar attacks.

(1) Mrs. P., highly nervous temperament, age 26, suffers periodically from this form of auto-toxemia, generally immediately before the menses. She is a high liver, and in spite of warnings imbibes freely at times. Previously I had never been able to relieve her, but during the last two attacks, I have been able to do so promptly by giving her one capsule (20 centigrams) of colchi-sal every ten minutes until six capsules were taken, by which time she fell asleep, awaking two hours later, completely free from migraine and all symptoms. This took place on both occasions.

(2) Mr. S. F., nervous temperament, age 46, has suffered since boyhood from very acute attacks of "bilious toxemia" or migraine, at which time he became almost insane with pain—so much so that the neighbors at such times, became alarmed at his cries. The feeling of nausea and weariness, pain in the calves of the legs, always preceded by several hours the acute symptoms of headache and vomiting. The attacks come on apparently from no special cause and occur sometimes twice a month, sometimes once only in three months. The patient is usually able to detect the premonitory symptoms of an attack the evening before, and then abstains from food, so that the next day vomiting only brings up some clear mucous fluid. Calomel administered at night and saline purgatives in the morning never yet succeeded in preventing the usual symptoms following in succession. Diet does not seem to inhibit these attacks. The auto-toxemia in this patient is most severe, and the same conditions are repeated on each occasion. The heart's action is reduced to under fifty pulsations, the extremities become cold, even in summer, and the patient seems to be able to endure the pain only by sitting up in bed with the head held back so that the cords of the neck are violently strained; the breath is usually very acrid and peculiar in odor; while the urine becomes almost alkaline and highly charged with phosphates and urates, for forty-eight hours after each attack.

I was consulted during his last attack and succeeded in arresting the headache within twenty minutes of his taking five capsules of colchi-sal (each capsule at intervals of five minutes), when he fell into a deep sleep and awoke the next morning perfectly well and refreshed, although the intensity of the paroxysms and excitement caused thereby, usually made him a wreck the next day. I have since found this treatment universally successful wherever the capsules of colchi-sal are retained a sufficient length of time

to allow of their contents being absorbed.—*Dr. G. W. Tobias, New York, April 15th, 1904.*

Dr. A. H. Ohmann-Dumesnil, under date of June 1, 1904, writes as follows:

There are numerous occasions when resort to a Hypnotic becomes a matter of imperative necessity, and in the choice of such remedy several points of interest present themselves for consideration by the conscientious prescriber. Such a preparation must be *safe, certain* and *prompt*. In many cases it is demanded that it must also *relieve pain*.

Believing that a haphazard selection of a hypnotic with which to meet a multitude of conditions causing insomnia is no more admissible than random prescribing for any other serious pathologic state. I have made a somewhat careful study of the various preparations of this kind in the market.

A consideration of the formula presented by The Tilden Company under the name of Narkogen convinced me that it should perfectly meet the various demands upon a perfect Hypnotic described above, and a trial of this remedy further convinced me that Narkogen is a step in the direction of definite therapeutics for conditions which need definite diagnosis and treatment as much as any others.

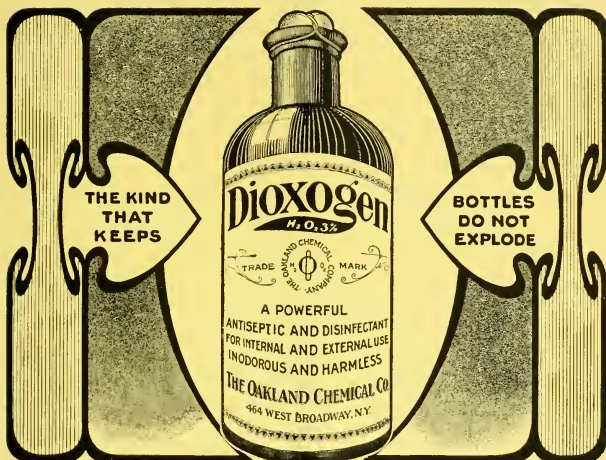
Narkogen, consisting as it does of

Chloral Hydrate,	grs. x
Potass. Bromide,	grs. x
Hyoscine Hydrobromate,	grs. 1-200
Narkine (Tilden's),	grs. ss.

to each fluid dram, will, of course, have a wider range of usefulness than as a mere Hypnotic. It is decidedly Anodyne, relieving pain promptly. It exerts a prompt Anti-spasmodic action and is unsurpassed as a Nerve-sedative. It is Antiphlogistic, exercising a powerful influence upon both the vaso-motor and general circulation. Its various component parts are synergistic and each enhance the action of the other, all tending in the direction of quiet nerves, quiet circulation, oblivion to pain and mental distress and the allaying of nervous erethism.

For the benefit of readers who do not know what Narkine is, it is a very superior opium preparation from which all deleterious qualities have been eliminated. It gives a dominant tone to this rational and effective preparation which will amply satisfy any physician who will give it a trial.

According to the latest edition (11th) of the Extra Pharmacopœa (Great Britain), page 26, Kugloids are capsules containing creosote and eucalyptol combined with benzoic acid and quinine glycerophosphate; they are recommended for influenza, pharyngitis and bronchitis.



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The Use of High Enemas in Cholera Infantum.

The use of the "high rectal douche," as our brothers, the French call the high enema, is practically unknown to a large body of the profession. On two separate occasions, when called to see a child suffering from Cholera infantum, I suggested the use of the enema, only to meet with the objection from the attending physician that there was no colonic tube in reach, and moreover that it was a difficult and dangerous thing to try on a young infant.

Now it is neither difficult nor dangerous to give even the youngest child a high enema—if you know how to go about it.

Neither is it at all essential to have any special apparatus. The old family fountain syringe (or the bulb variety for that matter) will serve the turn excellently well. Take a fairly large and thick-walled gum catheter, and get an ordinary dropper. Take off the rubber and insert the large end of the glass tube of the fountain syringe; the small pointed end can now be pushed into the catheter, and being graduated will fit any bore. It is advisable to keep the catheter free from this connection however till it has been inserted, as it can be twisted and turned as necessary. Grease the instrument well with sweet oil or vaselin, and with a firm upward boring motion

penetrate beyond the sigmoid. Do not attempt to use force but "wiggle" your way—the sense of touch will tell you how far you have gone and whether you are meeting with resistance from any fold of the bowel. If this seems to be the case allow a little water to flow and this will help matters. In infants the tube may be sent up for from seven to nine inches, though the experienced hand alone should attempt the latter.

If the doctor will, when called to a case of cholera infantum, give as a first step a pint of either cool or warm water in which half a teaspoonful of the vaginal antiseptic powder (W-A) has been dissolved, he will soon see the benefit. Even though the bowels are moving freely the enema will wash away a large amount of slime and debris which has lain perdue and the result will be that the fever will fall two or more degrees in as many hours.

After the bowel has been thus washed it will benefit the child to throw into the bowel twice daily eight ounces of warm normal saline solution. This need not be thrown beyond the rectum. As soon as the flux ceases this step can be omitted. Ten grains of the Intestinal Antiseptic (W-A) should be dissolved in four ounces of water, and with a dropper or small spoon two drams of this solution given every half hour

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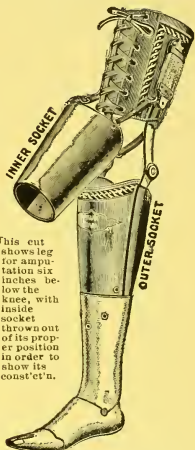
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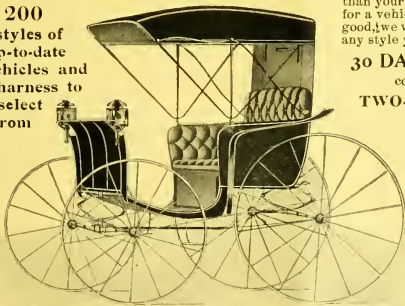
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Richmond, Virginia.

till the stools are odorless. As soon as the remedy begins to have effect the stools will get dark, and the dosage should then be increased till they become normal in color and regular as to frequency. One, two or three "Anodyne for Infants" may be dissolved in a teaspoonful of warm water, and given half hourly for two or three doses. This will relieve pain and flatulence and procure sleep.

It pays to cut off all food except five to ten drops of beef juice or Bovinine, for the first twenty-four hours. This may be given with a dropper—iced preferably—and just allowed to trickle down the infant's throat. Barley water may be given *ad lib.* Opiates should not be given on any terms.

The skin of the child should be bathed every three hours and then rubbed well to produce capillary circulation. The clothing should be light but of wool. Fresh air is essential; in fact the child with cholera infantum should practically live out of doors.

Taking a case from its incipency, and granting that the disease has not existed over twenty-four hours, the proceedings should be substantially as follows: Give calomel gr. 1-10 every fifteen minutes till one grain has been taken; give the high enema and order the Intestinal Antiseptic solution as described. Have the child's mouth washed out and his body bathed before you, and give personal instruction relative to future care. If the people are not well provided and not scrupulously clean,

either order or dispense Bovinine; if of a better class, order expressed meat juice if equally convenient. Never trust dirty or unintelligent people to handle meat for a case of this kind.

The "Anodyne" granules can be given in solution and to this may be added one granule of hydrastin. The dosage should not exceed one granule of the "Anodyne" hourly, after the first two or three doses, which may be at fifteen-minute intervals if the child is very peevish and shows signs of pain. Bear in mind that barley water and the beef juice are the only foods to be allowed for the first day.

If this plan is followed you will not have anything in the *tractus intestinalis* to ferment, and so will be able to secure promptly an aseptic condition. This should be the main endeavor in all these cases, and when this is remembered the value of the high enema will be apparent.

The second day, if matters have been properly attended to, the child can be allowed albumin water, one part of predigested milk to three of barley water, and the beef juice. A few granules of papayotin may be dispensed with instructions to slip two into the mouth after each feeding. The bowel must be washed out as before and scrupulous care taken as to cleanliness.

In cases where collapse is evident, when the physician is called, there is no remedy so efficacious as glonoin and camphor. Dissolve one granule of glonoin in a teaspoonful



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of water, and give ten drops every ten minutes till the cold blue face takes on a flush, and warmth is felt in the hands.

Two drops of tincture camphor may be then given every hour for three or four doses. Whisky does more harm than good.

In extremis, aromatic spirits of ammonia is the best thing. Hot bags should be put round the infant, and the enema used should be of hot saline solution. Push the Intestinal Antiseptic solution and every fifteen minutes give five drops of Bovinine or similar nutrient. Sanguiferrin has served the writer well. Even in this low condition the bowel must be cleaned, and gr. 1-10 of calomel should be put on the tongue four times hourly and washed down with the barley water. Then a teaspoonful of Saline Laxative should be dissolved in four ounces of water, sweetened, and a teaspoonful given hourly, or every half hour till the bowel has been emptied.—Geo. H. Candler, M. D., Chicago, Ills.

How to Avoid Prescribing Opium and Morphine.

Dr. N. B. Shade, of Washington, D. C., in an article published in the Medical Summary refers to many unfortunate effects of prescribing opium and morphine, intimat-

ing that the depressing after-effects of the administration of these drugs more than offsets the temporary good accomplished by their use. He mentions a very prominent congressman whose life, in his opinion, was cut short by the administration of morphine hypodermically in the case of pneumonitis. Dr. Shade states that he still prescribes morphine, but very seldom, as he finds it much safer to use papine. Papine, in his opinion, possesses all the desirable qualities of opium with the bad qualities eliminated. Some of the brightest minds of the present age are now being devoted to the development of a therapy in which the primitive bad effects of many important drugs are eliminated. Where the therapeutic action of morphine or opium is desired, it would seem to be a safe procedure to give papine a trial.

Efficacious Remedy in Cystitis.

Dr. J. G. Templeton of Dyersburg, Tenn., says he has been using Cystogen for about three years and likes the results. He has frequently stopped the discharge of pus from the neck of the bladder and has found it a very efficacious remedy in cystitis.

Enteroclysis.

Among the varied causes of convulsions, none play a more frequent and important part than auto intoxication. They are more frequent in children, due generally to a possible over-feeding, improper food, or constipation. The intestinal canal contains a variety of toxins, derived from the ingesta, bile and putrid material. There is continuous absorption from the intestines, including the taking up of toxins.

In the acute infections, where convulsions is oftentimes a forerunner, auto-intoxication from the intestinal tract undoubtedly is of no minor importance. Infections are the result of microbes, and we know these bacteria produce something injurious to the system, they elaborate poisonous ptomaines or toxic substances. Nature tries to rid the body of this poison, through its various channels of elimination, one of which is the intestinal canal.

It is here we can aid nature with our antiseptics. The value of internal intestinal antiseptics, I believe is greatly over rated. Many of these drugs are soluble and absorbable and those that are not are so often given in such small doses that in the long journey from the mouth through the intestinal tract, they have spent most of their value before they have proceeded far.

Not to employ internal antiseptics would be unwise, but I would urge a more liberal use of antiseptic solutions by means of the rectal tube. This enteroclysis has not only its antiseptic value, diminishing the toxicity of the intestinal tract, but oftentimes an antipyretic action. This mode of treatment has not been very popular with the physician because of the unclean work, but I am confident the results will repay one for the labor.

In all cases of convulsions, immaterial of the cause, and in any other condition pointing to auto-intoxication, I flush the lower bowel with a solution of Glyco-Thymoline one or two ounces to the quart of water.

Glyco-Thymoline is always kept in my emergency grip.—Sol. Newmayer, M. D., Philadelphia, Pa.

Enterocolitis and Cholera Infantum.

Cleanse the intestinal tract with calomel and a saline or with castor oil. Prescribe a suitable diet, easily digested and non-irritating. Irrigate the rectum and colon at suitable intervals with normal salt solution or some mild antiseptic, using for the purpose a soft rubber catheter or colon tube.

Instead of opiates, which lock up the secretions and thereby favor auto-intoxication, relieve the muscular rigidity and the excruciating pain which is such a drain



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upon the vital forces, by the use of antiphlogistine as hot as can be borne to the entire abdominal walls and covered with absorbent cotton and a compress. If the patient is not too far gone, the effect will be astonishing. The little sufferer, who until now has been tossing in agony and restlessness, with drawn features, will in most cases quickly become quiet; the drawn look will leave the face and a restful slumber will often supervene and start him upon the road to recovery.

The explanation of this, in part, is not far to seek. The heat and moisture combined with antiphlogistine's well known hygroscopic properties, directly soothe the inflamed parts, reflexly contracting the visceral blood-vessels and relieving their engorgement. The tension of the muscular and nervous systems is further relieved by the action of antiphlogistine through the solar plexus, thus adding to and emphasizing its local effects upon the inflamed intestines.

Glycogen in Diabetic Albuminuria.

The writer calls attention to the value of glycogen in the treatment of diabetic albuminuria. He recalls the fact that last year he was led to conclude that the hepatic cell

in diabetics seemed to have lost the power of fixing glycogen in its cytoplasm. His researches have since been confirmed by Monier, of Liege. This brings to mind the fact that Frerichs many years ago, having obtained by trocar from a diabetic patient a parcel of hepatic tissue, ascertained microscopically the absence of glycogen in the hepatic cell. Albuminuria is a grave complication of diabetes and requires active treatment. Unfortunately, this symptom and diabetes are, as it were, antagonistic, the former requiring a milk diet, or at least a diet rich in hydrocarbons; the second, on the contrary, demanding a diet from which are excluded as much as possible starches and sugars. Again, considering the condition of the kidneys in diabetics, certain remedies now used, antipyrin and other toxics, cannot be employed. The writer found that the methodic use of glycogen seemed to avoid this difficulty, and mentions a number of cases with charts to sustain his point. The dose administered began, as a rule, with one gramme (15 grains) in the course of the day.—M. Laumonier (*Bulletin General de Therapeutique*, January 15th, 1904.)—*From Monthly Cyclopædia*, April, 1904.



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Irregular Menstruation and Treatment.

Practitioners of medicine are consulted by no class of patients who display greater solicitude than those who have amenorrhea.

In the popular mind failure of the menses to appear is supposed to be due either to pregnancy or tuberculosis, and either may cause a degree of anxiety that is truly intense.

The term amenorrhea is used to mean the total absence of the menstrual discharge, or a marked deficiency in the quantity of the flow. Amenorrhea may be physiological or pathological. During pregnancy the absence of the menstrual discharge is, of course, physiological and demands no consideration in this article. When pathological, the causes of amenorrhea may be said in general to be due to the following:

(1) Taking cold, at or near the menstrual epoch. (2) Severe mental perturbation, as fright, sorrow, or great elation of spirit. (3) It may be symptomatic in several affections, as tuberculosis, anæmia, chlorosis syphilis, typhoid fever, nephritis, pelvic peritonitis, and other morbid conditions. (4) Obesity. (5) Luxurious life, or overtaxing the nervous system. (6) Stenosis or atresia of the cervical canal, or imperfect development of the tubes, ovaries or uterus. (7) Vicarious menstruation may make the condition obscure, there being a discharge at the regular monthly periods from the nose, lungs, bladder, stomach, nipple, or other part.

The treatment of amenorrhea must comprehend attention to general considerations and special indications must be remembered in the various expressions of amenorrhea.

The treatment must, in a word, comprehend remedies and measures which are indicated by the etiological factors present in every case which comes up for treatment. When the amenorrhea is caused by having contracted cold, the patient should have a warm sitz bath, and hot applications should be applied to the abdomen and thighs. Often a hot vaginal injection will serve a most useful purpose, and a laxative, preferably a saline, will greatly aid in bringing on the flow.

In amenorrhea, delayed menstruation and dysmenorrhea, Ergoapiol (Smith) has acted in my hands in a most satisfactory manner. In scanty menstruation, I found it particularly valuable, and I shall enter in detail about one of a series of cases of this character, later on in this article, where this agent brought on a full menstruation and the general health of the patient began to improve at once. When mental perturbation is a factor in these cases it is manifestly

the duty of the physician to have the environments of the patient made as quiet as possible, and anti-spasmodic or nerve sedatives should be added to the treatment.

When amenorrhea is associated with syphilis, the uric acid diathesis or morbid condition must receive correct treatment. My experience with Ergoapiol (Smith) is such that I regard it as an indispensable remedy in all expressions of amenorrhea along with proper remedies for any diseased condition associated in the causation of the affection. Of course those cases where the amenorrhea is due to atresia of the cervical canal, and to any other condition which is remedial only by surgical means, drugs will prove of no avail. The same can be said of instances in the amenorrhea due to a rudimentary state of the female organs of reproduction.

A lady some time ago brought her daughter to my office for treatment of amenorrhea. The girl was 18 years old and was visibly anæmic. She had an indifferent appetite and was more or less dispirited. She had enough menstrual flow each month to stain the napkin, but this was all that could be said. I had this patient to take Ergoapiol (Smith), one capsule after each meal, and on going to bed regularly for a month. At the next menstrual period the discharge was without pain and free, and the quantity and color was as natural as she had ever known her menstruation to be. She took Ergoapiol (Smith) in the same way another month, and then ceases to have any further trouble. Her color is good and her appetite is likewise excellent; she is full of spirit, and, in a word, well.

A lady aged 33 had scanty menstruation which had covered the period of a year. At no time in the year had her menstrual period been longer than eighteen hours, but generally twelve hours told the tale. Her menses were not only scanty, but the color of the menstrual blood was pale, and this was attended with a disagreeable odor. This woman had no associated disease that most searching examination could bring out. Still she had steadily increased in flesh for the last two years, and to this I attributed the amenorrhea.

I had this patient to take systematic exercise and a dietary that was rational, and to take Ergoapiol (Smith) with regularity, a capsule four times a day. After two months this woman ceased to take the remedy, her menstruation having become normal.

A girl 20 years old was sent to me by the matron of a boarding school. She enjoyed good health prior to entering the school, but for the past three months she had not menstruated, and was suffering constantly with

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vertigo and had attacks of hysteria. I attributed the amenorrhea to change of conditions of life—that of an open life on a farm to that of a shut-in inactive life. Ergoapiol (Smith) was given after each meal for two weeks prior to the day of her usual menstruation. This brought her menses on fully. She has since had no further trouble in this way.

Mrs. A. P. L., aged 35. This lady suffered with frequent attacks of headache, had backaches nearly all the time, and suffered greatly with vertigo. She was the mother of three children, the youngest being 6 years old. For the past four years she had scanty menstruation and the blood was very pale. She rarely had the menstrual flow to continue longer than fifteen hours. I was satisfied that the vertigo and all her distress was due to insufficient menstrual flow, and I accordingly put her on Ergoapiol (Smith). She took it through the month, one capsule after each meal; but for a week before the expected period she took two capsules instead of one. She was greatly pleased this time to have a full and free menstruation. Acting on my advice, she took the capsules three times daily for two months, and this acted in a happy manner and she has now passed an entire year and has not failed to menstruate freely.

My diagnosis was fully confirmed by this woman's health being good in every way since the establishment of menses on a basis of health.—*E. C. Willey, M. D., in the Southern Practitioner.*

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ference with these mercantile oils consists: "in want of pungent odor; in the alcoholic thin and mobile appearance, being reduced in specific density through the presence of acids; in the taste, the result of the contracting tendency of resins and tannates."

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Statue to Dr. William Elias B. Davis.

The memory of Dr. William E. B. Davis, late of Birmingham, Ala., will be appropriately perpetuated by the erection of a monument by the Southern Surgical Association, of which Dr. Davis was the originator as well as founder. He not only conceived the idea, but organized the association in all its details and served as its secretary and executive officer for thirteen years. The association does well in thus testifying its appreciation of this distinguished physician, whose memory will live in spite of granite or bronze.—Buffalo Medical Journal.

The statue will be made by G. Moretti, who was the designer of Vulcan (the Colossus iron man which represents the Birmingham district at St. Louis Exposition) and will be in bronze, 7 1-2 feet high, standing upon a granite pedestal 9 1-2 feet high.

Signor Moretti is now making a marble bust of Dr. Davis in Alabama marble. The plaster cast is a very fine likeness. He has made an indemnity contract to have the statue ready by the first of December next that it may be unveiled at the coming meeting of the Southern Surgical and Gynecological Association.—Editorial from the Alabama Medical Journal, May, 1904.

The Atlantic City Meeting.

The fifty-fourth annual meeting of the American Medical Association was the most successful in its history, so far as attendance was concerned. Something over 2,800 members registered at Atlantic City. As a meeting place, it would be hard to find a more satisfactory city, for the hotel accommodations are almost unlimited. A little matter of two or three thousand people does not bother 800 hotels! There was less work in the House of Delegates than was the case last year, though there was still too much time wasted. The Association is committing a serious error in doing much tinkering with its constitution and by-laws, and in allowing a "close corporation" of individual members, representing but four or five States, to run the whole machine. Organization is progressing rapidly and satisfactorily, it is true, and it is to be hoped that it may so continue. There is, however, a very decided undercurrent of resentment, and this should not be overlooked by the gentlemen of the coterie. If the organization is to be effectively held together when once secured, there must be evident less "close corporation" politics and more broadness in dealing with those questions which affect the general tone of the whole profession. The Association must, sooner or later, recognize that a control which makes its Journal the "greatest advertising medium for proprietary preparations" in the United States is not the control that will hold together State Associations which do not approve of this policy; there are such, and their number is rapidly increasing.

A criticism that has been made in previous years can be repeated this year, if one considers the hodge-podge of stuff in the "Hall of Exhibits" at the A. M. A. meeting. It is a disgrace to the Association that it should permit the foisting of nostrums upon physicians at these meetings. There need be no misunderstanding of this matter. A nostrum is a secret remedy, one the actual component parts of which are not known, and booth after booth in the "Hall of (disgraceful) Exhibits" displayed such wares. If exhibiting this stuff at the meetings and advertising it in the Association's Journal is not "promoting the use of secret remedies," will some kind friend be good enough to say just what it is? The responsibility rests with the Trustees; it is plainly up to them to insist upon decency, or else openly confess that the Association is out for money, clean or dirty, so long as it is money; that money, and not a high professional standing, is what they are after.—Editorial notes from the California State Journal of Medicine.

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Exodin, A New Cathartic.

The author desires to call attention to a cathartic which has very important advantages over the many old and new purgative remedies hitherto unknown. It is Exodin, diacetyl-refigallic-acid-tetramethyl-ether, a greenish-yellow substance melting at 356 to 374 deg. F. As is shown by Professor Ebstein's report on this remedy, preliminary experimentation proved that rabbits bear $7\frac{1}{2}$ -grain doses very well and that this amount in human beings exerts a mild purgative action.

As suggested by Ebstein, Stauder gave to adults two to three tablets $7\frac{1}{2}$ grains and to children one tablet. As it is tasteless and odorless, patients take the remedy without difficulty. The drug never causes any unpleasant symptoms whatever, no nausea, eructation or gastric oppression; even patients suffering from ulcer of the stomach can take it at all times without the least ill effect.

Its tastelessness gives Exodin an important advantage over castor oil and cascara sagrada. Its action is slow; and here his experience differs from that of Ebstein, for he found that it takes on an average 18 to 24 hours to manifest its effect. Action in eight to twelve hours only occurred in mild cases of chronic constipation, or when repeated doses had been given. This slowness of action proves that the drug, in contradistinction to the rapidly acting purgatives, has no injurious or irritant effect on the intestinal mucosa. Exodin does not occasion a sudden and temporary downward peristalsis of the intestinal coils; it has a slower and more protracted stimulant action. This explains the facts that gastric pains and colic are absent; that the evacuations with rare exceptions are soft and formed, and diarrhœa is hardly ever seen; and that its action, which lasts several days and only gradually subsides, is not followed by constipation.

The author here appends a number of illustrative cases, which clearly evidence the splendid action of the remedy.

The most suited cases for its exhibition are acute and chronic obstipation in otherwise healthy persons, the so-called atonic forms and also the cases in which regular defecation must be stimulated in consequence of hæmorrhoids, intestinal stenosis, twists in the colon, etc. Ebstein warmly recommends its use in pregnancy, even in the early months where all other purgatives may be useless. It does not lose its efficacy when used at intervals. Spastic obstipation, intestinal paralysis and coprostasis with large fecal accumulations are of course little suited for the remedy. Here warm oil enemata are preferable; and after

the scybalæ are softened Exodin can be warmly recommended to facilitate their evacuation in the place of the customary castor oil or calomel.

By examining the fæces before and after employing Exodin, Stauder satisfied himself that increased production of mucus or other symptoms of irritation of the intestinal mucosa never occur.

For these reasons he agrees fully with Ebstein's conclusions as to the value and efficacy of Exodin. The certainty and constancy of its action and the entire absence of unpleasant by effects assures for it a very prominent position among the purgatives. Of course it goes without saying that a careful physical examination of the abdomen to determine the nature and cause of the fæcal retention is a necessary preliminary to the institution of treatment in every case.—Dr. Alfons Stauder, Specialist for Diseases of the Stomach and Intestines, Nuremberg, Germany. Read at the Nuremberg Medical Society, April 21, 1904; Abstracted from the *Therapie der Gegenwart*, June, 1904.

Collargolum Enemata.

During the last few years there has been a constant increase in the number of favorable Collargolum publications. Good results have been recorded from its use in apparently absolutely hopeless cases, and we convinced ourselves in our division of the fact that anyone who administers it to a considerable number of septic patients will have the same experience. In serious cases we did not emply Unguentum Crede, preferring the intravenous injection of 1% collargolum solutions ($2\frac{1}{4}$ grains to $\frac{1}{2}$ oz. sterile water), which we used with excellent results.

But great obesity, anæmia, venous paucity, etc., may hinder the intravenous injection. Besides, a single injection is rarely enough, and only a limited number can be given if a new vein is used for each. Finally, the needle may be displaced from the lumen of the vein by a motion of the patient when the constructing bandage is loosened.

In one case where the veins could not be reached on account of their anæmic narrowness and the patient's well developed panniculus adiposus, we therefore used Collargolum as an enema. The method has the following palpable advantages: It can be used by any attendant, is neither painful nor troublesome, is entirely safe, permits the use of larger doses, and brings the drug in contact with an excellent absorbing surface. It is no less efficacious than the intravenous injection. The intestine is not irritated, even when 1% solutions are given for 14 days, and the Collargolum enema is

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almost entirely absorbed, for a cleansing enema given 12 hours later brings only a slightly blackish fluid.

Having given the enema to two dying patients and demonstrated the absorption of Collargolum by histological examination, Loeb1 used the enemata in 27 cases, which are detailed with illustrative temperature charts. Six were sepses of varied origin; of these, four were cured, one was not benefited, and one died. One of the cured cases was a staphylococcaemia in which other remedies had failed; and one other case is especially noteworthy because it appeared hopeless when the Collargolum was begun. The fatal case was so desperate that the surgeon refused to operate, and even it showed some improvement the next day, so that a less marantic individual (she was 65 years old and tubercular) might have been saved. Out of nine cases of puerperal infection five were cured, three were not benefited, and one died. In this series one beginning parametric infiltration with irritative peritoneal symptoms underwent rapid involution, and in five other cases there was an inhibitive effect on supuration. In one case of obstinate rheumatism and in four cases of renal and vesical infection there were no results. Six consumptives with rapidly progressing febrile phthisis, one of them moribund, and all of them entirely recalcitrant to every internal medications, received the enemata without any especial effect. In sanatoria, where there is naturally a larger proportion of mild cases, there is probably a greater chance of success.

As regards the technique, the patient is given morning and evening an enema of 1 to 2 pints of lukewarm water. Half an hour after defecation, $7\frac{1}{2}$ grains of Collargolum in 1% solution are administered by a funnel or syringe. This amount ($1\frac{1}{2}$ ozs.) is almost invariably retained; the bowels usually move only after the cleansing clyster on the next morning. The enemata are given twice daily for at least eight and not more than 14 days. No unpleasant by-effects have been observed.

Loeb1 concludes that the Collargolum enemata give the same results in acute infections as does Unguentum Crede or Collargolum intravenously. In many cases the method has a surprising effect; and it has more than once been effectual when joint affections or phlegmasia alba dolens had appeared. It is probable that the method will save cases which we would otherwise lose.

For these reasons he heartily recommends a trial of the treatment. Since November, 1903, when he demonstrated the method in the Royal and Imperial Medical Society of

Vienna, he has received many favorable reports on it, both in hospital and in private practice.—Dr. Heinrich Loeb1, Assistant at Prof. Schlesinger's Division in the Franz-Joseph-Hospital at Vienna. Abstracted from *Die Therapie der Gegenwart*, April, 1904.

Chorea and Anemia.

In the etiology of chorea, nothing is noted relative to anemia. It is simply accounted as an accompanying symptom of the condition. Medical literature emphasize the relation between rheumatism and chorea, with anemia as an important symptom. After observation of several cases, I am strongly of opinion, however, that anemia as a causative factor is worthy of investigation.

Anemia of toxic origin presents pathological conditions which favor the production of chorea affections. It is true that simple anemia is, as a rule, of secondary origin, and, viewed in this light, it may be argued that if chorea arises, it is the result of the primary and not of the secondary conditions—thus agreeing with the admitted etiology. This argument, however, will not satisfactorily explain those cases of chorea which arise remotely from the primary condition, but recently from the secondary effect.

I submit three cases in which symptoms, treatment, and recovery seem to intimate at least a possible relation between anemia and chorea.

CASE I.—A female child of eight years gave a history of typhoid fever eight months prior to my visit. According to the mother's statement, the child had made a quick and good recovery, gaining rapidly in weight and exhibiting the energy of her former life. Six months later she became irritable and pale, with pain in her arms and legs, which condition was soon followed by gastric disorders and irregular spasms of the muscles of the face. Simple anemia was in evidence from objective and subjective symptoms alone, but was unquestioned in the light of the results obtained from blood examination—the red blood element being present to the extent of barely 3,000,000 red corpuscles per c. m.

This case was treated with two teaspoonfuls of Pepto-mangan (Gude) and two drops of Fowler's solution, three times a day. After gastric symptoms had abated somewhat, two raw eggs per day were added to the diet. The patient was discharged in five weeks, completely recovered.

CASE II.—A female child of ten years of age; gave history of malaria (a well-defined case of intermittent fever) one year previously. The pallid condition of the child

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that RESINOL OINTMENT is the best local application for Eczema and kindred skin diseases, and as a dressing for burns and other traumatic inflammations it is simply superb. The itching and burning of Pruritus Ani, Pruritus Vulvae, Proctitis, Itching and Inflamed Piles, Marginal Eczemas and Fissures, yield to its soothing influence as if by magic.

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I am using Resinol Soap and Ointment and like them.

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induced the mother to solicit my aid. Upon examination, I found slight chorea movements which had escaped the mother's eye, though she did admit that the child "could not sit still very long at a time," and was constantly working her fingers." The blood examination revealed no plasmodium. The red cells were reduced to 2,800,000 per c. m., with a proportionate decrease of hemoglobin.

Pepto-mangan (Gude) alone was employed in doses of two drams in a glass of milk three times a day. The blood examination four weeks later showed red cells present to the amount of 3,900,000 per c. m. at which time I dismissed the case completely recovered.

CASE III.—A female child of thirteen years. Two months before my visit, the mother informed me, the child became peevish and pale, and was reproved at school for her inability to write neatly. She was taken from school, but she grew rapidly worse. Morning nausea, vomiting, headache, and anorexia were her daily companions. I found her with pronounced histrionic spasms, with involvement of the upper and lower extremities. Hemic murmurs were plainly apparent, but no endocardial

irritation could be determined. The blood count showed reduction in red cells to 2,100,000 per c. m. The hemoglobin was reduced to a degree greater than the red cells.

A curious feature of the case was the morning nausea. Immediately upon awakening, she experienced nausea, which was followed by vomiting. I discovered, however, that this condition was superinduced by odors from kitchen, and directed that a small sponge, moistened with creosote water be placed over the nose and mouth before the preparation for breakfast began. The annoying symptom was promptly checked by this simple method. The anemia in this case may have been produced by malnutrition, but even this view is mere speculation.

The irritability of the stomach in this case was so pronounced that I did not deem it wise to give nourishment—not to speak of medicine—by the stomach. During the first four days rectal alimentation was employed. A nutritive enema, consisting of four ounces of peptonized milk and two drams of pepto-mangan (Gude), was given every six hours. Small amounts of peptonoids with creosote on ice were given by the stomach. Egg albumin was taken in all the water she drank. After four days, the

stomach was tested with small amounts of milk and pepto-mangan (Gude). Beginning with four ounces of milk and one dram of pepto-mangan (Gude) every four hours, the amounts of each were rapidly increased, until after three days the patient was taking eight ounces of milk every two hours and four drams of pepto-mangan (Gude) three times a day. This diet, plus three raw eggs a day, together with the above treatment, was all that was employed for six weeks. The blood examination at this time showed a highly gratifying condition—the red cells being present to the extent of 4,100,000 per c. m. The bloom of youth once more tinted the cheek, and the shrine of St. Vitas lost a visitor.—*Roshier W. Miller, M. D., Ph. G., Barton Heights, Va.*

Faulty elimination is a prolific source of trouble and the cause of so many distressing symptoms pointing to no definite lesion, but complicating and obscuring the actual symptoms of a real disease. Such a condition is puzzling to the doctor and discouraging to the patient, often causing dissatisfaction with the treatment and lack of confidence in the physician, yet the whole train of symptoms may be only the result of a lowering in the tone of the secretory organs and the retention of poisonous material in the system. In all conditions which follow as a result of the blocking of the eliminative organs, such as colds, bronchial catarrh, la grippe, pneumonia and autotoxia, one of the first indications is to bring the eliminating organs up to the normal and put them in condition to perform their natural duty. A large proportion of the cases which doctors are called upon to treat during the winter and in the spring are furnished by neglected colds and after-effects of la grippe. These uncured affections keep the system open to new attacks, the patient develops a bronchitis, or pneumonia, the kidneys are affected and sometimes left permanently weakened. A cold is by no means a simple affair which, left to itself, will always speedily get well. The acute stage will probably spend itself, and the patient may think he is free from further trouble, but such attacks render him more liable to further infection, and pneumonia, chronic bronchitis, and chronic kidney disease are some of the sequelæ of frequent colds. Therefore, these apparently harmless colds are to be taken seriously and cured absolutely as soon as possible. To cut short these attacks and restore the tissues to normal powers of resistance the Dad Chemical Co., of New York commend Respiton. It contains *asclepias tuberosa* and *berberis*. A teaspoonful in a glass of hot water every two hours will

effect a complete cure in a few days.—*Interstate Medical Journal, April, 1904.*

Glycogen in Therapeutics.

The glycogenic function of the liver has always been more or less a mysterious process. What is definitely known is that glycogen, existing naturally in the liver of all animals, ceases to be secreted whenever the normal conditions of health are impaired. Dr. Jacques de Nittis, of Paris, appears to have been the first to draw attention to the remarkable anti-toxic properties of glycogen. The claims set forth by him were, however, regarded with some skepticism until other investigators, such as de Luschi, Tessier, and de Rorig, gave color to the original investigation and showed further the properties of glycogen in combating albuminuria and diabetes. Partaking of the nature of an antitoxin, its chief function appears to consist in increasing the phagocytotic properties of the leucocytes whenever the system is called upon to resist microbic invasion. When the system is invaded by disease, the glycogen is either drawn upon so excessively as to deplete the economy, or as a consequence of a specific disease, such as diabetes, the liver ceases, partially or entirely, to secrete glycogen. The result of this condition is that the body is left defenseless. De Nittis is so sure of his ground on this point, that in a communication to the Biological Society of Paris, March, 1902, he says: "In the struggle against microbic invasion, the resistance is directly proportional to the glycogen of the organism. Without glycogen there can be no phagocytosis." It is a remarkable fact that while the liver secretes comparatively a huge quantity of glycogen during health, small doses of glycogen administered by the mouth, or hypodermically under pathologic influences, produce the results set forth by these European investigators, and which appear to be fully confirmed by those who have tested glycogen in this country. Glycogen is now being utilized in America in the treatment of typhoid, scarlatina, influenza, diphtheria, erysipelas, furunculosis, diabetes (more especially when complicated with albuminuria and great emaciation), hyperchlorhydria, appendiceal abscesses, septic poisoning, and the numerous forms of auto-intoxication. Glycogen, as produced in the laboratory, is a white amorphous powder, easily soluble in hot water, and yielding an opalescent solution. Owing to the fact that it is readily converted into maltose, isomaltose and dextrose by the action of dilute mineral acids, or when brought in contact with the buccal and gastric secretions through the action of the diastatic



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enzymes contained therein, it cannot be given in watery solutions by the mouth, but is best administered in capsules, which should be given one hour before or two hours after taking food and never with it. De Nittis explains the advantages of glyco-gen in the treatment of typhoid fever by saying that it stimulates the production of leucocytes, whose phagocytotic activity gradually eliminates the fever germ and indirectly allows a normal heart action by reducing the strain.—*New York Medical Journal*, April 23rd, 1904.

In a paper entitled "Surgical Clinics," Dr. Frederick Holme Wiggin, Visiting Surgeon, City Hospital; Visiting Gynæco-

logist, St. Elizabeth's Hospital; Consulting Surgeon, Metropolitan Throat Hospital, New York, details the technique of an appendicitis operation. After suturing the wound and disinfecting the skin, he applies the following solution: Celloidin, 1 part; absolute alcohol, 4 parts; ether 4 parts. This thoroughly seals the wound, but permits of its complete inspection, as the celloidin is transparent. The dressing also acts as a splint and holds the edges of the wound in proper position. If properly applied, it prevents infection of the wound and tissues from displacement of the bandage or careless handling. This is a great advantage, especially when the surgeon is

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Dr. Wiggin has used this dressing for five or six years and has found it very satisfactory and a great aid in his surgical work.—Abstracted from the *International Journal of Surgery*, May, 1904. (Vol. 17, No. 5, p. 153).

Serum Treatment in Typhoid Fever.

Du Mesnil du Rochemont (*Therap. Monats.*, January, 1904) deals with the serum treatment of typhoid fever. The value of the treatment is still doubtful. Chantemesse, after a relatively large experience, states that a visible improvement in temperature, pulse, and general condition can be seen when the serum is used or the disease runs a milder and shorter course. In 507 of his cases he had a mortality of only 6 per cent. as opposed to a mortality of 12 per cent. obtained in the Paris hospitals by other methods; the danger of perforation was decidedly diminished. Amongst 50 children treated by Josias with Chantemesse's serum the mortality was 4 per cent. only, but the length of the illness was not necessarily shortened nor the possibility of relapse excluded. Mendez treated 65 patients with only one death. He found that the best results were obtained if the injections were begun early. The effect of treatment was not constant, and some days were needed for its development. Local reaction appeared as a rule on the second day, the temperature began to fall after forty-eight hours, falling gradually if treatment had begun early, but suddenly if during the second or third week of the illness; Diazo-reaction and albuminuria ceased to be present on the second or third day in the mod-

erately severe cases, and by the fifth or seventh day the general condition had become normal, although the rash might still be visible and the spleen enlarged. Du Rochemont treated 6 cases with serum from the Swiss Institute, and obtained moderate results. The rise of temperature was checked and the general conditions improved, but there was no evidence that the attack was cut short. Jez obtained an extract of the thymus, spleen, brain, and bone marrow of a guinea-pig, which had been strongly immunized, and this gave unexpectedly good results. Eichhorst used Jez's preparation successfully in 12 severe cases of typhoid. In 1 case a normal temperature was reached on the seventh day, in the others on the fourth or fifth day after the treatment began; the general condition improved, and delirium, if present, rapidly disappeared. Pometta, on the other hand, employed the same method in 10 cases without being able to trace any appreciable result. One patient died; the temperature of another seemed to be on the whole lower and his delirium less after the treatment was begun, but fever still continued for five weeks. Du Rochemont tested the extract on 6 patients and speaks well of it. In the mild cases a speedy fall of temperature ensued, and those cases which threatened to be severe ran a milder course; no unpleasant symptoms followed large doses, patients feeling better for the treatment. The rash and the swelling of the spleen might persist after the fall of temperature. Convalescence seemed to be unusually prolonged in some cases and needed especial care.—*Indian Med. Record*.

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The Charlotte Medical Journal.

VOL. XXV.

CHARLOTTE, N. C., AUGUST, 1904.

No. 2

The Physician in Relation to Society.*

By J. Howell Way, M. D., Waynesville, N. C.,
Secretary North Carolina State Medical Society, Member American Medical Association, etc., etc.

Mr. President, Gentlemen of the Graduating Class, Ladies and Gentlemen:

I should indeed be wanting in courtesy did I not express to you my appreciation of the honor conferred upon me when your medical faculty extended me the invitation to address you on this occasion. I assure you, however, that, as much as I appreciated the cordial invitation, I reluctantly agreed to come, not because I do not enjoy a visit to your fair city—to the contrary, there being no city within proud Carolina's gates a visit to which fills me with greater delight, nor yet because I do not enjoy talking to doctors—to the contrary, for some of the warmest friends of my life are among the members of my profession; but because I deeply realized the responsibility of being the one to speak the final words of instruction or advice to a circle of ambitious young men who, after years of arduous labor, stand ready, as it were, with throttle in hand, awaiting the final words which start them speeding along life's roadway amidst the uncertainties of professional life.

Behind you lies the efforts of years, to the front the future, gilded with radiant bows of promise, I trust, of much usefulness to your fellowman, for yourselves prosperity and happiness in the God-given work you have elected to assume.

It has been said of life that it is "a strain of moods like a string of beads, and as we pass through them they prove to be many-colored lenses, which paint the worlds their own hue, and each shows only what lies in its own focus." I wish to remind you that of all classes of men, the men of our profession perhaps more critically than any other, study each bead as it passes, detecting refractive errors or color defects, and focussing with close scrutiny the searchlight of scientific investigation upon every avenue of thought or activity, having in view the estimating of a reasonable conclusion as to what is best for mankind. From his close and intimate contact with humanity in all its varying phases and conditions, comes the knowledge of men and things as related to men, which can but render the physician of today possessed of one of the most powerful influences entering into the lives of the people. To direct your attention briefly and in rather a random than a systematic or connected way, to some of the relations of the physician of today to modern

society will form the subject of my remarks this evening.

To begin, how shall I depict the physician? As the Frenchman, who with flippant wit, suggested, he was a "man who pours drugs of which he knows little into a body of which he knows less." Or shall we agree with the Christian Scientist that he is "simply an error of mortal mind"—indeed, from the Christian Science standpoint he is the most colossal error which ever dared cross the threshold of human experience!

Or shall we speak of the physician as did Emerson of the gentleman, that "he is a man of truth, lord of his own actions and expressing that lordship in his own behavior, not in any manner dependent or servile, either upon persons or opinions or possessions. Beyond this, manhood first, and then gentleness?" This a most fitting and delightfully charming picture, and yet I prefer to borrow the beautiful words of Robert Louis Stevenson, who in the prefatory note to a little volume of poems among the first of his writings, said:

"There are men and classes of men that stand above the common herd, the soldier, the sailor and the shepherd not unfrequently; the artist rarely; rarer still the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization; and when that stage of man is done with, and only remembered to be marveled at in history, he will be thought to have shared as little as any in the defects of the period, and most notable exhibited the virtues of the race. Generosity he has, such as is possible to those who practice an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Herculean cheerfulness and courage. So it is that he brings air and cheer into the sick room, and often enough, though not often as he wishes, brings healing."

The doctor of medicine in relation to society stands for truth in the abstract and in the concrete, for the eternal verities of human kind against the alluring mysteries of seductive occultism. He believes in the correctness of the theory that honesty is the best policy, and does not advertise; he knows full well the abhorrent spirit in our profession towards the false and the sham, and no flaming posters or multi-hued circulars or pictures, or double-headed pages of the daily press proclaim the wonders of his skill. He stands for charity in its broadest and best sense. Not merely in the giving of dollars and cents, but in his daily ministrations at the bedside of the sick and suffering, he gives oftentimes of his very self without the expectancy of material reward, and does it without counting the cost. When Mr. Carnegie presents your city with \$50,000 for a public library, I am sure every tongue rings with pleased compliment, and have you ever thought that during the lives of the pres-

*The annual address to the graduating class at the commencement of the Medical College, at Charlotte, N. C., May 10, 1904.

ent generation the physicians of this city have given many times this in their unpaid professional services to the welfare of the community? I have no doubt there are individual members of the profession here who have given this amount themselves, and I am equally certain not a year passes but an amount equal to that named is contributed by your doctors to the assistance of suffering men and women and children.

I do not refer to this in a spirit of intimating you do not appreciate and well requite the splendid professional service you receive from a corps of medical gentlemen than which no city of our fair land has a more talented or skilled profession. I have seen the material evidences of their success in a business way; I have visited in their handsome homes and driven in their stylish equipages, and I congratulated them upon having you for their patrons, as well as I extend to you my felicitations on having such doctors. I merely suggest you continue to take the best possible care of them, pay their bills promptly and encourage them in their every effort to make your fair city an ideal one in every way sanitary and hygienic. And I may add, should the time come, and it will come, aye! it is here now! when the doctors wish you to join with them and with more money secure better buildings and greater hospital facilities and teaching equipment, that the sick of your city may be the better cared for than at present, and that this noble institution of medical learning may be developed and broadened and the foundations of a great institution of medical learning laid here, which will not be content with attracting a few score of our own sons, but will reach out and afford medical instruction to hundreds of the young men of our fair Southland who now seek the learning we should furnish here in Northern schools, where many diseased conditions are different from the type of disease they will be called on to treat among the people of the South.

As suggestive to you of the altruistic love of the profession for the profession's sake, which permeates the mind and heart of the true physician, North Carolina's learned Chief Justice to the contrary notwithstanding, let me remind you that when the inventor of something which comforts or conveniences mankind in some way makes a discovery, he immediately rushes to the patent office and covers his secret from the world, unless they pay him for its knowledge. Per contra, what man of medical character fails to discover freely and without price the results of his investigation to his brothers of the profession the earth over, and invites them to make use of the discovery for the alleviation of human distress? Did Crawford W. Long, of Georgia, or Dr. Wells and Dr. Morton, of Massachusetts, attempt to make merchandise of the discovery of the God-given blessing of anaesthesia? Did Wm. Jenner, working out the wonderful fact that vaccination would remove the horrors of that disease, smallpox, organize a stock company and wring tribute from the

then pest-ridden world? Did Joseph Lister hoard the secret of asepsis and anti-sepsis in wound treatment and endeavor to make money of it for himself alone? Did Robert Koch, the great German scientist, when in one of the less prominent German cities he worked out the cause of tuberculosis, ever suggest that he would retain control of the results of his labors for commercial purposes? Did Marion Sims, when he made discoveries which immortalized his name and revolutionized the treatment of the special diseases of women, keep within his breast the knowledge and procure a patent on the instrument which bears today his name? Did Walter Reed, when he freed Cuba for the first time in her history from the scourge of yellow fever, organize a syndicate to whom he proposed conveying his knowledge for a few millions or a tithe of the economic values of the lives saved through his efforts? But why multiply examples of what to the average doctor are but pleasing illustrations of what the sentiment of our profession teaches us is but plain everyday common professional decency? And yet view, will you, the contrast to the business and trade methods of the age? What commercial enterprise was ever set on foot which yielded so great returns of more practical value to humanity than the results of the work of the men just alluded to? Let millionaires multiply until they are as thick as "autumn leaves in Vallambrosa," let the exaltation of gainful greed and selfishness organize every form of human industry into a trust, let predatory wealth control within conscienceless grasp of monopoly every necessity of life, but never so long as this old world of ours goes flying through limitless space, shall the science of medicine, medicine the learned profession, medicine the comfort and solace of suffering humanity, make merchandise of human distress or lay under tribute to commercial laws the victims of disease whose lives are saved or affections cured through the achievements of modern medical science.

The physician in his relation to society stands for the truest type of patriotism, and no class of men excel him in his devotion to his country in peace or in war, in prosperity or adversity. When the tocsin of war is sounded he is ever ready to go to the front and help in the cause which engages the energies of his fellows, for wherever human activities and human suffering and woe exist, there the doctor feels it a place for him. The physician believes in his country's honor, and follows her flag with heroic devotion, and the American doctor has ever been in the forefront of the champions of liberty, just as we see today in the monarch-ridden countries of Europe the men of our profession always identified with measures calculated to give greater liberty of thought and action to their people. But the American physician does not approve of any maudlin sentimentality which seeks to make this fair land of ours the perpetual home of the oppressed of all other lands to attract to our social blood-current strains

of degenerate stock and neurotic heredity seeking to engraft their physical, mental and moral weaknesses upon our people. In race pride he glories, and wishes for America always the first place among the nations of the earth, developing the race and the people with the Spartan's physical endurance and courage, the Roman's lofty patriotism, the Greek's splendid culture and artistic beauty, the Anglo-Saxon's unyielding stubbornness and tenacity of purpose, the Teuton's solidarity and strength, the Slav's rugged character and aggressiveness—these elements, blending in one harmonious whole, imbued with American ideals, inspired with American history, devoted to American principles of government, constitute the type of true manhood for which the best element of our profession stands today; and I urge upon you, gentlemen of the graduating class, that you see to it that through no thought, act or effort of your is the standard lowered.

It was Pope who said:

"Know thyself, presume not God to scan,

The proper study of mankind is man."

And it is doubtless true that no man realizes this so wholly as the physician in his relation to society, for he must needs know the intricate details of anatomy, and the complicated activities of physiology and pathology must be to him an open sesame. Human nature individually and collectively, he must understand, the laws of affinity and consanguinity, the operations of hereditary influences, and when possible by wise counsel in the privacy of his work, save the state from the perpetuation of the helpless, the delinquent and the feeble. He must understand the fundamental and profound facts of sex, and the marriage relation, and be prepared with wisdom and sober counsel courageously given, to prevent crimes against the race and against society by the ignorant and the wilful. Not only must he attend to the diagnosis and treatment coupled with the giving of any measures known to our science and art to aid his patient in escaping or preventing future attacks of the same affliction, of more than twelve hundred different diseases which afflict the human body, originally made though it was in the image of God himself, but it fittingly becomes one of the highest types of our specialists art, in the words of the immortal bard of Avon, to "minister to a mind diseased, pluck from the memory a rooted sorrow, raze out the written troubles of the brain, and with some sweet oblivious antidote, cleanse the stuffed bosom of that perilous grief which weighs upon the heart."

The catholic spirit of the true physician welcomes into the field of self-help to mankind the votaries of every allied science and cheerfully joins his fellow beings in paying deserved homage to the Pastuer who by his scientific discoveries saved the grapes from parasites, the swine from cholera, and found a way to prevent hydrophobia, and to the Rontgens who touching the electric current with new-found subtle touch brings forth

from the inmost recesses of the human body its hidden secrets. Always and forever the friend of science, in whatever field the tilling be done, he remains yet the sympathetic friend and counsellor of men, of women and of children, and is the man of all men in our midst who in an intelligent and a practical way stands for the purity of womanhood, the nobility of manhood, and the preservation of childhood. Every home in this wide land has a friend in the family physician who worships at the altar where the pristine purity of a loving motherhood and the inspiring example of a noble fatherhood erect their temple of home. In seasons of prosperity and adversity alike he is the trusted friend and counsellor of the physical and oftentimes of the morally sick as well. Occupying the most confidential relation known to men, knowing the skeleton in so many closets, weighed with the responsibilities of his onerous duties pushed forward ever with an earnest wish to promote the best in men and morals by wise and sympathetic advice he can oftentimes lessen immorality and prevent crime. And no matter whether his knowledge of your secrets be protected by statute as privileged communications, he betrays no secrets, and brings no blush of shame to the face of a frail offender. The limitations of human strength, the temptations of mortal flesh, the absurdity of so many of the so-called standards erected by modern society, the hypocrisy of the pharisaic puritan, are well understood by him and referred to their proper physical basis, and while countenancing no wrong and being no party to accusations against his fellow man, he seeks to cover with the broad mantle of charity their faults and with the spirit of truest brotherhood endeavors to lift them to their feet again.

Such should be the life of every true physician—such I am proud to say is the life of many a medical man of my acquaintance. What a grand and a glorious thing it is to have life vocation in which your whole duty impels you to help to make everything and everybody better, to help improve the moral and material status of the individual and the community in every possible way is the duty of the physician and the greatest is he who grasps the eternal verities of the fact that a physician has a place in sympathy with all the activities which concern and engage the attention of his fellow mortal belongs to him and he should occupy it. I know it will be said to you that medicine is a jealous mistress and your energies must not be too much divided—and they should not if you expect to attain much success as a physician, but you are to minister to men, women, and children in times of their troubles, and to do so successfully, you must be world-wise enough to enter fully into the sphere of their activities and to comprehend their lives. Again it is my honest conviction, though good men may differ with me here, that the doctor who knows nothing, does nothing, but his strictly professional work is very, very often

not the best physician and is most likely to be at outs with the whole community. Narrowness of interests creates narrowness of mind, and no avocation of life needs broader or more comprehensive mental grasp than that of the physician. Every practicing physician should have some recreative labor or work outside of his profession. Every practitioner of medicine should be at least more than passively interested in the political affairs of his community. I do not mean he should be an offensive partisan, nor that he should stoop to the slimy details of practical ward politics, but I do mean that he should entertain an interest in who the rulers of his city, county, state and nation are and his influence should ever be exercised in promoting clean men and wise measures. This he can easily do without being in any sense necessarily an offensive partisan or a too zealous party man for there is a very vital and positive relationship between medicine and the scientific principles underlying social phenomena. When medicine touches politics, politics are bettered; but whenever corrupt politics engages the doctor, medicine is made the loser for the experience. The relation of our constantly increasing complex social conditions to disease is becoming more and more insistent with the reflections that are the natural accompaniment of advancing knowledge, and it is more and more becoming the duty of physicians to give more attention to the public health, for their knowledge of specific sanitary requirements, their educational advantages, their trained judgment, self-poise and self-restraint in responsible and delicate positions, their ready familiarity with the vagaries of human nature, the respect as a rule accorded them by their fellow citizens, make the well-informed physician one fitted for executive work and even leadership in civic affairs. It may take time to convince the people of a community that sanitary plumbing, pure water, or compulsory vaccination pay; men of lower moral standards may argue that official corruption will not necessarily sap the vigor of a city or a country where it is permitted to exist and eventually lead to a deteriorated government with higher taxes and less security for life and property, but the physician knows better, and he may daily while carrying on the active business of his profession, inculcate his views into the hearts and minds of his community thus demonstrating that his life is more valuable to his people than that of the doctor who under pretense of too vast an amount of professional work lazily neglects his manifest civic duties. The physicians work for the state must to be successful have injected into it the same qualities which render his purely professional work successful—courtesy and sincerity, honesty and courage, earnestness and intelligence are as essential in the one field of activity as the other and as also in medicine, his best work will be done with mind and heart engrossed in the work for the work's sake and with scant thought of the material rewards for himself. But

you will pardon me if I have possibly digressed too far on this line, for I am one of those men who rejoice in looking on the intelligent successful physician as being a man who in his community has few peers and no superiors—a man whose judgment of affairs in general should be good as well as his medical, for it is an undeniable fact that a man possessed of the essential qualities to make a first-class physician is endowed with character elements from which a leader and director in almost any line may be evolved. 'Tis said, "The aim, if reached, makes great the life." I am very sure despite the fact that the Supreme Court of North Carolina has decided otherwise, that the individual little comprehends the true nature of medicine as a profession and the physician as a servitor of mankind, who thinks his functions limited to the narrowed channels of drugs on the one hand and operations with surgical instruments.

Discoveries and improvements in the scientific departments of medicine have within the past few years well nigh revolutionized the practice of the art of medicine, and an ever increasing demand is now made for unusual accuracy in the making of observations and records, and in the use of instruments of precision, in the surgical and medical care of the sick—a part of this demand has been met by the appearance upon the scene of the trained nurse, a strictly modern product with her nice knowledge of technicalities and attractive uniform, she is the recognized daughter of the ever-faithful and ever-helpful woman who has from earliest dawn been the constant companion and aid in hours of sickness and distress. At first the modern nurse was rather an anomaly, picturesque and comely ofttimes (and I may add parenthetically with the lapse of time her comeliness is growing upon us rather than declining!) but today she is a purely beneficent necessity, the doctor's reliable assistant and invaluable associate. Her work is second in consequence only to that of the physician, the vocation is an honorable one, the emoluments attractive—the supply, I may be pardoned for adding, is like that of doctors, there are the good, the better—and well, those not so good! It affords me pleasure to note the excellent work done in the training schools for nurses in this city and to suggest that all measures looking to the betterment of the conditions, material and otherwise, under which your nurses secure their training should from the cold standpoint of selfish interest, receive your heartiest support for when seriously ill the life of the patient may and does so often depend as much upon the attentiveness and devotion to duty of the nurse as upon the technical skill of the physician.

Your relations to the most important question of pulmonary consumption is one of the most vital when it is remembered that fully one-fifth of the human race die with some form of tuberculosis and that an additionally large number of people die with some other

affection the fatality of which has been promoted by the tubercular conditions present in the individual. One of the greatest duties devolving upon our profession I may truthfully say without being accused of being an enthusiast because I reside in a section famed for the almost immunity enjoyed by the natives and more famed for the splendid results obtained in the treatment of early cases of tuberculosis, I say we can readily see the most important work for the twentieth century medical investigator lies in the direction of learning how to wholly prevent and to cure consumption. It is with pleasure I note that everywhere prominence is given within and without the profession, to three dominant ideas: first, the prevention of consumption is the most important responsibility of the world today; second, the prevention of consumption is the practical method of dealing with the scourge; third, the prevention of consumption is the first duty of the state in relation to the lives of its people. These great principles today permeate the profession animating to renewed energy and study thousands of patient workers in the field medical and sanitary, and it is only a question of time until this great problem will like that of anaesthesia which for generations occupied the thought of medical investigators, be settled and adjusted in a way to add countless thousands of years to the lives of human beings and millions of wealth to the state. In this great work it is not too much to suggest the graduates of the North Carolina Medical College will ever be found in the forefront lending their every effort to allay the progress of the Great White Plague and to hasten the day when its dreadful mortality will only be recalled by the historical student of the pathology of the past as a blot on the therapeutics of a past period.

That there are drifts and tendencies in the medical profession at times like the tides of the ocean all careful observers will admit. All of these movements are carefully to be noted, some for avoidance, and the profiting of wise men by the failure of others, some per contra, to be followed for the restless changing trend of scientific thought is ever upward, forward and to the forefront of the light. For a generation now almost there has existed a marked tendency to specialism in medicine. Of the work of the modern specialist, it may be truthfully said with the fear of successful contradiction, that while some of it is fussy, and lacking in art, and some of it is ostentatiously pretentious, and withal (relatively as compared with the emoluments of the general practitioner), possibly too high-priced, yet in the main the work of the modern specialist is as consciously performed as that of his more quiet brother in the profession, the generalist, and is distinctly advantageous to both profession and people in that promotes in our healing art a greater degree of accuracy, efficiency, and progress. En passant, I may remark that any illusion I may make as to possible fallibilities of some specialists have

no reference whatever to the several very excellent specialist members of the Charlotte profession who I am advised stand in a class to themselves—the best of the good! I am sure none of you need find it necessary to essay to protect your persons as did the poor man who was picked up in a swoon on the streets of an eastern city some time since. On his person was found a tag reading “I only have fits; please do not operate on me for appendicitis, for I have already been operated on three times!”

Special training naturally leading to a more thorough and complete mastery of both basic principles and practical operative details is the dominant note of the times, and is equally as appropriate to the various departments of medicine as to other forms of personal or modern corporate activity. The scientific discoveries of the past half century have established upon a most enduring and solid basis that most important branch of modern medicine, the science of hygiene. State medicine, one of its most important sub-divisions, has won and will continue to hold for itself and our profession, the respect, the confidence and the hearty esteem of some of the wisest of the world to a degree not hitherto attained. It is mutually to both the advantage of profession and of people this state of feeling should continue, and it should be encouraged and fostered in every possible legitimate way. Few men even in our own ranks fully recognize the extent of the work of our profession along the lines of educating the public how not have the very disease for which they send for us to treat them when sick, and I doubt if our profession will ever (this side of the at-present-to-us-inaccessible data kept by the recording angel,) ever receive just and honest recognition of the pure altruism of our earnest efforts to stay the hand of infective disorders and to daily lead the people as we constantly endeavor to do, up to higher sanitary living. However in this connection I must insist that you should not expect too much from the public, I would urge you to do your work in season and out of season, whenever the opportunity presents itself to help lift to higher sanitary heights the lives of the men and women and children entrusted by both public and private confidence and the laws of the state to your professional care. Remember that if the learned Chief Justice of as progressive and enlightened a state as North Carolina is at the dawn of the twentieth century, carefully and deliberately places a decision upon the imperishable (though happily reversible) records of jurisprudence in the inner sanctuary of the state's temple of justice, to the effect that he regards the regular medical profession of his state as a conscienceless self-seeking class of men whose sole purposes in securing at the hands of the legislature after years of earnest educational effort, legislation saying that men who assume to practice medicine shall show themselves to be possessed of at least a minimum knowledge of medicine—that such action on the part of our profession was

corrupt and venal and breathed the coarse spirit of commercialism and trades-unionism. If this sublime manifestation of intelligent appreciation of our efforts is seen in the learned head of the highest court of our state, should we expect too great a reverence for our earnest endeavors in their behalf from the masses of the people? I think not, and yet gentlemen, no matter how far the learned jurist influenced possibly by the association in his studies of recent years of the work of economic fanatics, and the too intimate contact in magazine articles and elsewhere with the visionary propagators of all the noxious isms of the day, no matter I say, how far the learned jurist may have strayed from the real truth as we most sincerely believe it to be, in his unjust aspersions east upon the members of the most honored and respected profession of his state, it is well for us to remember in a spirit of Christian charity that the habit of throwing mud too unfortunately common in the man who essays he prizes of modern political life, may have been dominant in the mental processes of the gentleman when he wrote his now famous decision saying the truths of hygiene, the laws of dietetics, the fundamental principles of right and proper living and the many other things than drugs which the profession of medicine has so laboriously worked out and of which we are justly so proud as constituting so magnificent a part of our armamentaria, was not a part of the glory of medicine and their practical application to the healing of disease of mind or body was not the practice of medicine—the practice of medicine being the eminent jurist asserted to be only the giving of drugs or performing of surgical operations. But pardon the digression, if candid confession of a hurt acknowledgement of a “cut-to-the-quick” be wrong, I have erred.

To the psychologist, the co-existence, side by side, of twentieth century medicine and mediæval doctrine of disease is worthy of more than a passing notice. Progression and retrogression are disparate forces with opposing terminals, yet the advent of anaesthesia, asepsis, the cellular pathology, the science of bacteriology, the revelations of the X-ray, and their train of wonderful scientific attainments carries in their wake the slimy trail of Hahnemannian inanities, Eclectic absurdities, Osteopathic asininities, and Christian science inanities, while the masses pass their judgment choosing their healers, meanwhile their representatives in legislatures assembled enact class laws legalizing imaginary schools of medicine and vitalizing frauds to prey upon the credulity of the human race. Our future lies in education—the public must be more and more taken into the confidence of the regular medical profession—and I am pleased to note the tendency along this line with the best class of educated physicians. A cause, be it ever so worthy, or a truth be it ever so palpable, can not reach the public unless championed by its devotees. The masses of our people must be more and more educated in anatomy and physiology and the

rudiments of medicine if we are ever to instil them with correct ideas relative to the various forms of quackery which continue to flourish like weeds rampant in fertile soil. With the diffusion of more general recognition of the fact there are no secrets in medicine, there are no wonder-working drugs known only to a select few, no remedies for the treatment of any disease which are not the common property of all regular physicians who care to study the literature of the profession—and yet this latter statement of mine while it awakens a responsive echo of ready assent in the breast of every doctor here this evening, for every one of them knows I speak the solemn truth; we all know it is one of the most difficult propositions to assert and maintain in the face of some new-comer to the town or the assertion to the contrary by the niece of the aunt of somebody's neighbor's wife who “took the wonderful treatment” of the Mephistophelian-Judas who promised to perform miracles with the “new remedy not known to the regular medical doctors.”

The physician of today stands for the development of a sound mind in a sound body, and as such is unalterably opposed to the too generous use of intoxicants as beverages. In making this statement I do not mean to limit the scope of our opposition to alcoholic intoxicants alone not forgetting the various other drugs now used for the purposes of refreshing and stimulating the tired and worn body. Believing as most of us do in the therapeutic value of alcohol in certain diseased conditions of the human body, and also realizing its power under improper dosage to develop disease, it is perhaps superfluous for me to remind you there remains but scant success to be attained in the practice of medicine by the physician who imbibes too freely of ardent spirits. And not only in his personal example, but in his therapeutics and his spoken words as well the influence of the physician should ever be for the cultivation of a manly strength which will not be dependent upon artificial stimulation, and his hand should ever be raised to prevent and curtail the growth of the far too prevalent nervousness of modern life which seeks repose in stimulants and narcotics. One might well ask here why do not our temperance friends outside the profession join hands with us more vigorously in the warfare against the many forms of patent medicines so extensively used to cloak stimulants and narcotics? It is estimated that the American people pay in round numbers annually for patent medicines more than \$100,000,000.00, and it is an undeniable fact that the immense majority of this amount is spent for certain “standard remedies” which owe their selling virtues to the contained alcohol. The Massachusetts State Board of Health some years since had a careful examination made of a large number of the popular sellers and the astonishing fact was established that many of the popular patent medicines have as great alcoholic strength as ordinary whiskey and in none of them does the percentage of alco-

hol run as low as in beer and wines of all kinds. And this too without considering the quantities of cocaine and other narcotic drugs lavishly used in their making! Think for a moment of the utter absurdity of a crusade against beers and wines with from 2 to 10 per cent alcoholic strength, when the sale of so-called "tonic bitters" containing 45 per cent alcohol is encouraged and promoted by the published certificates of people whom we know under ordinary circumstances to be honest and truthful in their transactions of life. Within the gates of your own fair city is maintained a successfully managed institution with a growing and a pleased clientele, for the treatment of the unfortunate victims of the various drug habits. Among the various drug habits treated in this institution is that growing out of the use of a certain well-known tonic which has for many years past made a specialty of publishing the pictures of people prominent in public life notably congressmen and senators with an occasional eminent jurist thrown in for flavoring. As suggestive of the difficulty of successfully erasing many of these patent medicine habits as compared with ordinary alcoholism, I would note the charges are just double that for alcoholics. There is food for thought in these suggestions, and if every physician in North Carolina discussed this matter in this candid frank way with his patients and their families, there would unquestionably be a decrease in the consumption of these vile mixtures.

The physician is tolerant. He believes in according to every citizen the right to have his own private opinions, be they ever so absurd or unhygienic or even criminal so long as they influence only their holder, but when the holding of such views directly lead to overt practices which endanger the health of the community and jeopardize the life of the innocent, war, relentless, vigorous war, to keep this pestiferous seum of the wide and varied quackeries at bay until the more intelligent leaders of the press and public understand why the quack advertises, why the Christian Scientist gives absent treatments, why the osteopath deftly slips the spinal bones and why there are so-called schools of medicine. But unfortunately we behold in this crusade certain of the press, unmindful of the splendid examples set before them by the talented Edward W. Bok of the *Ladies' Home Journal* or the Rev. J. M. Buckley of the *N. Y. Christian Advocate* in their recent excellent editorial utterances against the patent medicine curse and their constant successful efforts to keep the columns of their periodical clean and free from this class of contaminating advertisements, we behold yet too many of the press who divide space with the charlatan, the ministers of the gospel, who yet lend their names and fame and even their photographs to devil-speed these boastful pretenders, the public official in high life who backs these vampires and sells their signatures for pelf—these unfortunately are not

yet with us in our fight for decent rational medicine—except when they get sick when I have noticed they are usually as prone to summon the nearest good doctor as quickly as people with more consistent practice. The glorious records of the scientific achievements of modern medicine are fast bringing home to the press and public the sum total of the world's indebtedness to the regular profession.

Before concluding my remarks, gentlemen of the graduating class, there yet remains two personal matters I should feel recreant did I not direct your attention to, very briefly, however: Medical Ethics and Medical Societies. We often hear medical ethics between doctors spoken of unthinkingly by the laity as something very terrible in its application—I am sure after the tutelage under the direction of the cultured members of this faculty, that none of you can possibly entertain any such views and yet, I want to say just one thing about medical ethics—it has been said before, but it cannot be said too often until all the laity know it well—it is this: The principles of medical ethics as adopted by the organized medical profession of America and as practiced by gentlemen of the medical profession the earth over, is nothing more or less than the practical application of the Golden Rule to the exigencies and the varying incidents of medical practice. That is all there is in it—nothing more—no less. The cultured physician instinctively and intuitively respects the principles of ethics in general, and in doing so, he cannot fail to be consistently ethical when viewed from a professional ethics standpoint. I would have you remember that it is perhaps, I say perhaps advisedly, a little harder for the young physician just starting out and desirous of getting into practice quickly, to be strictly ethical, and yet I wish to assure you that nothing will so surely commend you to the good-will of your conferees of your profession as an impression that you are ethical—that you are a gentleman and expect to practice your profession as a gentleman. And I would urge you to foster and to cultivate the good-will and esteem of your conferees, for after all their respect is one of the proudest jewels you will ever wear.

Medical Societies are in a certain sense simply post-graduate medical schools and as such deserving of the heartiest support possible and the cordial co-operation of every doctor in reach of one. While there are many medical societies in America, municipal, county, state, inter-state, national and international, general and special, the new and the hoary and venerable in years and rich in the heritage of medical truths disseminated through their meetings, yet it is only comparatively of recent years that the entire profession has fully awakened to their true value from a social and educational standpoint, and with this awakening has grown a tremendous increase in the number of members in these societies—the fact is that now in the more

progressive states like North Carolina, the great majority of the legal practitioners of medicine are identified with some medical society and find attendance upon their meetings helpful in stimulating professional study and an exchange of information and particularly pleasing in promoting agreeable social relations among the members of our guild. I want as one of my parting words to you to insist that after you become a legal practitioner in North Carolina, for I assume that most of you will want to locate in this grand old commonwealth, to work, to live, and to die among the best people on earth, that you immediately unite with your county medical society. This carries with it under our present plan of membership union with the state society and also with the great national association if desired. And when possible you should endeavor to attend the annual session of your state society.

I might mention to you in passing as I have heard it intimated that this State Examining Board was a stone possibly rough, in the pathway of some, but I think that while this may have been so at one time when a certain gentleman present here this evening was *secretary*, that of later years a more pleasing order of things obtains and under the guidance as Secretary of the playful, pleasing, pliant, pliable, (pardon me if I had like have said "pretty") Pressley, the road over the state examination is smoother with the Mecklenburg man in charge than when the man from the mountains where the passes are rough and rugged, was in charge. If you gentlemen have not already cultivated in a pleasant way the Secretary of the examining board, I would suggest the doctor's banquet this evening will afford you an excellent opportunity to get close to him and to get him to kindly post you on the questions he intends to ask next week.

Seriously, gentlemen, I feel sure from the unusually fine appearance of this graduating class and the handsome intellectual development I see depicted in their faces, I can safely assure you will all pass with flying colors.

In conclusion, gentlemen of the Graduating Class, permit me to remind you again, that the doctor in his relation to society occupies a unique position among the men of his community. Most intimately connected with the course of human life from its first faint glimmerings and feeble infantile wails in the morning's gray dawn through the prosperities and the vicissitudes of the noon-tide of accomplishment to the chill and sombre shadows of eventide, all along life's rugged pathway, the physician is ever near in our joys and our sorrows alike, down to the valley of the shadow of death, he follows with his tender ministrations and with keen intuitive perception born of varied experiences he almost hears the ripples breaking on the farther shore.

The physician occupies a position of honor and of much responsibility to the State. Said Homer of old: "A wise physician, skilled to heal, is more than armies to the public weal."

Were this true in Homer's time, how infinitely more today when our knowledge enables us to accomplish so much more for the public weal. In humble and devout imitation of the Great Physician, who, with raised hand and gentle voice, with the injunction, "peace be still," soothed the turbulent Gallilean waters, the modern physician-sanitarian stays the pestilential gale and says to the plague, "Thus far shalt thou go—no farther!" In doing this his services to humanity can not be estimated in material values.

In the performance of his civic duties, as well as in the pursuit of his professional work, the physician of our country has ever displayed a commendable loyalty from the days of Dr. Warren and Benjamin Rush and our own Ephraim Brevard, to the gallant Wood and the patriotic Gibbs, who shed his life's blood at San Juan. You will appreciate the professional pride with which I recall to you the almost forgotten fact that during the Civil War the mortality rate was greater in the medical officers than in the officers on the firing line. No common type of courage or heroism was theirs, whether they were found on the bloody fields of Shiloh or quietly pursuing their work amid the shot and shell in the jungles of the Wilderness, or again offering their lives as a sacrifice as did the gallant Walter Reed in Cuba, in the fight to stay the ravages of yellow fever. Verily, the healing art has heroes of its own. Worthy of all praise is the man who exposes himself to defend humanity from bubonic plague and sacrifices his life, and the man who, modest and retiring of the rank and file of our profession, with large heart and sympathies responsive to the call of suffering humanity, speeds to the bedside of the sufferer, throws himself into the breach, receives the dread infection into his own body, and is carried by it irresistibly, like the flashing of the light, through the darkness into eternal day. This is no fancy sketch of mine, and I do not leave the confines of North Carolina for a splendid example: Only a decade or so in the past, before anti-toxin had robbed the dread infection of ipdththeria of most of its terrors and dangers, a great and good physician of Wilmington, Doctor Will George Thomas, was hurriedly called one day to a child in whose throat he had but a short time before placed a tube to relieve the terrible distress of breathing, which seemingly threatened its little life each moment. In some way the tube had become obstructed, and it seemed as if each moment was the sufferer's last. Knowing full well the dangers of the procedure, the physician deliberately placed his own lips to the opening of the tube and sucked out the poisonous obstruction. A few moments later the little fellow lay quietly in his mother's arms asleep. The child recovered. A few days later the physician died of diphtheria. Such noble souls were not born to die. Eternally do their memories live, a tender, sweet, fragrant flower in the remembrance of us all—

a memory too sweet, too hallowed, too sacred for human speech!

The nineteenth century was a proud period for medical science. The discovery of anaesthesia, that God-given boon to humanity, rendering possible the performance of difficult operations easily and opening up the realm of abdominal surgery. Physiological investigations of organs and their functions has made countless improvements in the field of general medicine, both in diagnosis and therapy. A brilliant light has been thrown across the hitherto darkness of the field of sero-therapy which has already given us control of that dreaded disease, diphtheria, and promises much for the near future. Experimental research in the functions of the brain, carried on by careful control, investigations in the lower animals, has demonstrated within the past two decades much that was previously unknown about the functions of the human brain, and developed largely the field of modern brain surgery. The splendid work done by our own Marion Sims revolutionized the treatment of the special diseases of women; but I would have each of you, gentlemen of the graduating class, particularly in the earlier years of your career, when things do not seem to be coming your way very fast, remember that once in the life of Doctor Sims, when after weary waiting for patients, two came; rather, he called to see them. He did the best he could, possibly as well as could any one else. They both died. Sims' cup of grief was full, and in the dead hours of the following night he, quietly removing the modest name above his office door, silently dropped it into an old well on the premises, at the time, as he thought, burying forever all ambitions for a career in medicine. And yet in less than two decades from that night, wherever there was civilization the name and the fame of J. Marion Sims was known not to be forgotten so long as suffering women exist!

Luxuriating in the fertile fields of modern asepsis, every conceivable form of surgical relief for suffering humanity now flourishes, and hape points the way to possibilities not dreamed of before our day. The revelations of the microscope, creating the new science of bacteriology, dispelled in rapid sequence the blundering dogmas of centuries, and laid bare the exciting causes of many diseases formerly looked on as mysterious visitations of Providence, abolishing the speculative from certain departments of medicine, creating true preventive medicine and standing today the court of final scientific appeal in many things medical.

Gentlemen of the graduating class, you are indeed to be congratulated in beginning your professional careers in the full noon-tide of scientific development, at the beginning of the twentieth century. Opportunities never realized or even dreamed of by your grandfathers of the the profession, are wide open before you. Cheered by the victories of the past, I bid you smilingly face the future hopefully, confidently, working with a zeal worthy of

your noble professional ancestry, toward the final solutions of the yet unsolved problems of medicine. Many enemies of mankind are still unconquered, notably consumption and cancer, dread disorders which touch almost every home in the land and make vacant a place around almost every fireside. May your labors be crowned with success, and the earnest efforts of your instructors, who have here labored so faithfully to instill in you the spirit of the true physician, bear a fruitage noble and helpful to mankind. In the grand effulgence of the twentieth century, with the profession of medicine rescued from the spirit of the charlatan and the empiricist, and resting as never before upon a broad and scientific basis, ennobled with a history of past accomplishments of valor and heroism, embellished by the graces of a higher type of culture and refinement, honored and respected by the public and the State, our profession offers to you possibilities which surpass Utopia's fondest dreams.

"Medical art is wondrous long,
Yet to the wise her paths are ever fair,
And patience smiles, though genius may despair,
Give us but knowledge though by slow degrees
And blend our moments bright as these.
Our noble art shall wear an angel's wings
And life shall lengthen through the it brings."

Gas—Ether Anæsthesia.*

By Southgate Leigh, M. D., Norfolk, Virginia,
Surgeon in Charge Sarah Leigh Hospital,
Visiting Surgeon Norfolk Protestant Hospital,
Etc.

In 1890, while House Surgeon at Mt. Sinai Hospital in New York City, I became interested in the use of Nitrous Oxide Gas, familiarly called "Laughing Gas." At that time it was practically unknown to our profession, but was much used by dentists in the extraction of teeth. Being acquainted with Dr. Hasbrouck, a dentist on Broadway, who did much of the extracting for the city members of the profession, I witnessed some of the doctor's work, which averaged from 15 to 25 cases a day. He anesthetized patients of all ages and conditions of health, and did not hesitate to operate on cases of cardiac disease. Indeed, he made no physical examination, to learn the condition of the heart and lungs. This surprised me greatly, but he assured me that he had never had a bad result.

Following this experience I bought a gas outfit from the White Dental Manufacturing Co., consisting of an inhaler, tubing, bag, and a small steel cylinder, containing 100 gallons of gas compressed to a liquid. In this form the gas could not deteriorate on keeping. We used this in the hospital in minor operations and painful dressings,

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

requiring not more than a few minutes time. Since then I have continued to use gas in my office and hospital practice in similar cases.

The Gas-Ether method did not come into general use until during the past two years. It has practically revolutionized the anæsthetizing of patients, and has, I have no doubt, saved many lives, especially in the North. The Southern surgeons have always had the advantage over the Northern ones in their familiarity with chloroform. During my term as Interne at Mt. Sinai Hospital, I had the good fortune to serve under Gerster, who was the most thorough and careful surgeon in New York City. He was a Hungarian, and brought with him to America many of the customs of the "Old Country." At that time, Mt. Sinai and the German Hospital used chloroform extensively. In the other New York hospitals it was practically unknown, and in one prominent institution its use was absolutely prohibited by the Board of Directors. Such was the fear of chloroform, a fear grounded largely on ignorance. At the same time chloroform was used almost as exclusively in the South as ether in the North, and I doubt not that our northern brethren lost more cases from ether, than the Southern surgeons did from chloroform, but the former had the advantage of not having patients die on the table. They died later from pneumonia and nephritis. Notwithstanding the fear of the effects of chloroform, ether was used most recklessly. The youngest assistants were the anæsthetizers, and in the Gynecological Department of Roosevelt Hospital at one time, an undergraduate did all the etherizing. A very large amount of ether was given, much more than was necessary to keep the patient "under," and the commencing of the anæsthesia was usually done in a most cruel and heartless manner. The cone was soaked with ether, and put immediately on the patient's face, being held there tightly, notwithstanding his violent struggles for breath, due to its suffocating effects. I believe that the harsh method of etherizing in the North had much to do with prejudicing the public against surgical work.

It is easy to understand then, how the profession in the North, and especially in New York City, has adopted so extensively the new method of anæsthesia introduced by Dr. Bennett, who has invented an ingenious apparatus for its administration. The patient is first made unconscious by nitrous oxide gas and then gradually the anæsthetic is changed to ether.

The anæsthetizing of patients in New York City has been practically revolutionized by the new method, which has done a great deal of good in two ways: First, by furnishing a safer and less disagreeable anæsthetic; and, second, by making the profession pay more attention to the administration of anæsthetics in general. I understand that the larger hospitals now have regular professional anæsthetizers, who give the anæsthetics when desired in special cases, and also have charge of the training of the internes in this most vital branch of surgical work.

I believe that in the South chloroform has been used almost as recklessly as has ether in the North. We need reform in this line, both in private practice and in hospital work. To my mind, both chloroform and ether are most dangerous drugs, and I am frank to say that I have always been afraid of both of them, and what is more, I do not want a man to anæsthetize a patient for me, unless he is thoroughly impressed with their danger, and constantly on the watch for signs of trouble. The anæsthetizing of my patients gives me more anxiety than all the rest of my surgical work combined.

Formerly it was my practice in the ordinary run of cases, where no contra-indication existed against either chloroform or ether, to start very cautiously with the former until the patient was fairly well "under," and then change to the latter. During the past twelve months or more, I have used the gas-ether method in all such cases, and have been delighted with the results. It is without doubt the most perfect method so far discovered.

Gas is rather pleasant than otherwise, and patients rarely object to taking it, and it leaves no disagreeable impressions on their minds. A few deep inhalations suffice to render the patient unconscious, then ether is mixed with the gas, and finally the patient breathes pure ether only. The time required to induce full anæsthesia is shorter than with chloroform, and much shorter than with ether alone.

Compared with ether anæsthesia alone, the amount of ether consumed is much less, and what is more important, less of the irritating drug gets into the system. Compared with chloroform-ether anæsthesia, the new method avoids the depressing and dangerous effects of chloroform. Gas apparently has no bad effects whatever.

The method of procedure is simple. The Bennett apparatus which I exhibit to you, is attached to a cylinder of compressed nitrous oxide gas; by turning a stop-cock

the gas is allowed to fill the bag. Usually a gallon is all that is required. If more is needed the bag can be easily and quickly refilled. The inhaler is fitted tightly to the patient's face, several breaths of air are allowed first, then the gas, until the patient is unconscious, and then a little ether is let in from the ether chamber, mixing with the gas. The amount of ether is gradually increased until the patient is freely anæsthetized. Dr. Bennett uses his inhaler throughout the entire anæsthesia, replacing the gas attachment with a bag similar to the old Ormsbee and Clover inhalers. Using this bag makes the patient breathe the expired air over and over again many times, and partially asphyxiates him. I do not think well of this part of Dr. Bennett's method. Some years ago I used the Ormsbee inhaler in a series of cases, and kept complete records of each case. I found that less ether was required and that breathing the air over again had the advantage of warming it, and yet I also observed that there was considerable depressing effect on the heart. My plan then in the gas ether method is to use the Bennett apparatus until the patient is well "under," and then change to the ordinary old-fashioned ether inhaler made of newspaper and towel.

My excuse for presenting so simple and well-known a subject before this distinguished body is that I have been deeply impressed with the advantages of this comparatively new method of anæsthesia, and am anxious to see it adopted generally by the profession throughout the South. Everything that tends to make surgery safer and pleasanter for our patients appeals most strongly to me.

And now a word on the subject of the administration of anæsthetics in general. The modern surgeon is not paying to this vital branch of his work the attention that its importance demands. In some of the best hospitals of the country the anæsthetic is entrusted to incompetent and unreliable assistants, and little or no attention is paid to many most important details.

As soon as an operation is contemplated the physician in charge of the case, whether in or out of a hospital, ought to begin to get the general system in better order. Especially should the heart be looked after, strychnine and sparteine being indicated in the majority of cases. The patient should be put on simple food, large amounts of

water, and mild cathartics. As much of this preparation as possible should be done before the patient enters a hospital, so that operation need not be long delayed.

Thorough cleaning of the mouth and teeth is important. Septic material from the mouth drawn down into the bronchial tubes is liable to produce broncho-pneumonia.

The choice of the anæsthetic depends largely upon the age, and condition of the heart and lungs. Chloroform is best as a rule for children and old people, for patients with respiratory or renal diseases, and for operations about the throat. If chloroform is taken badly it is usually permissible to change to ether. The gas-ether method is proper with all patients where ether is not contra-indicated. In some cases, especially alcoholics, it may be necessary to change to chloroform on account of bad breathing.

The selecting of the anæsthetizer is even more important than the anæsthetic. No man should be given this duty who is not fully alive to the dangers of anæsthetics, and constantly on the watch for signs of trouble. The operator ought never complain of incomplete anæsthesia, if he knows that it is due to the extreme caution of the anæsthetizer. It may interfere seriously with the smooth conduct of the operation, but far better this than to have the patient's life in jeopardy.

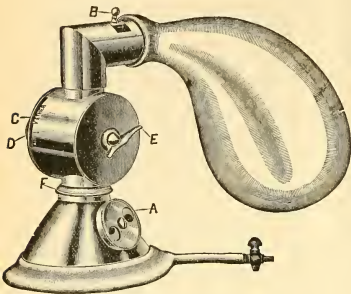
The greatest security in anæsthesia comes from the anæsthetizer's noting the earliest and slightest signs of depression, and of promptly combatting them, either by a change of anæsthetic or by the administration of stimulants. A general anæsthetic should never be given without at least some of the usual emergency remedies being *ready*; such as hypo-syringes filled with strychnine sulph., sparteine sulph., caffeine and soda benzoate, and whiskey; infusion apparatus; rectal syringe and oxygen apparatus. Also such instruments as mouth gag, tongue forceps and throat mop.

Besides choosing a cautious and well-trained anæsthetizer, the operator should, as far as his own work will permit, watch the patient's condition himself, and have the anæsthetizer report to him from time to time as to the state of the pulse.

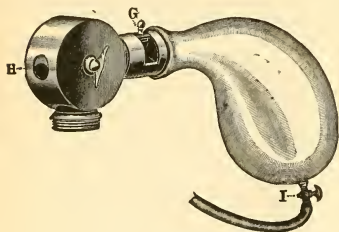
In my own work I always feel safest with an assistant who is very much afraid of the bad effects of both chloroform and ether.

I find that with such an assistant my patients rarely get into any serious danger.

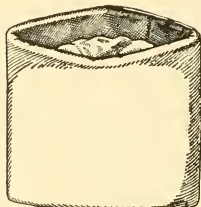
I am indebted to Messrs. Powers & Anderson, of Richmond, Va., for the following cuts illustrating the Bennett Inhaler and the ordinary Ether Inhaler made of newspaper and towel. Full and concise instructions are sent with each outfit.



ETHER INHALER.



GAS ATTACHMENT.



SIMPLE ETHER INHALER.

Uncinariasis in the Mountains of North Carolina.*

By W. P. Ivey, M. D., Lenoir, N. C., Member North Carolina Board of Health.

'Tis true that history repeats itself. The importance of the different varieties of human entozoa in the production of disease was for a long time overestimated. In the days of our grandmothers, it was believed by doctors, as well as laity, that in children at least, they universally existed; that many serious troubles were caused by their presence, and that their eradication was the preliminary step in all successful treatment. Then came a period when doctors did not attach any great importance to intestinal parasites. I have belonged to this later period, and it has been the rarest thing for me to prescribe an anthelmintic, except to placate a solicitous mother or grandmother. To-day again one intestinal parasite at least is forcing its importance upon us, and I am pressed into service in making this phenomenal leap from indifference to enthusiasm. To me, gentlemen, one of the most surprising happenings in my professional career is that I, in this year of grace, nineteen hundred and four, should be reading before the North Carolina State Medical Society a paper on worms. But such is the case, and my only apology is "that times change and men change with them." I have used the word worms advisedly. The subject of intestinal parasites has in the past, wittingly or unwittingly, been turned over to quacks and charlatans. The subject of uncinariasis is to my mind of too much importance to be taken possession of by the same gentry, and we must be on our guard to prevent it. It exists most largely among a class of people, whom it is going to be a hard matter, at least, to convince that it is a matter of any consequence. In order to give proper dignity and importance to the disease, I think we should be careful to invariably use the technical name and avoid the term hookworm or hookworm disease. By inattention we will fail to impress upon the laity the importance of the disease and its treatment will fall away from the physician into the hands of sharpers, and we will soon see advertised and on sale Smith's Hookworm Lozenges, Hamilton's Hookworm Harvesters, and so on and so forth. I do not propose to go into the consideration of Uncinariasis at length. Dr. Stiles has published a report on it and has touched fully upon every feature of it. Those of you who haven't that report I would advise to get it from the Marine Hospital service at Washington.

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

He has studied it as a zoologist. What I shall have to say about it will be from the standpoint of a clinician and sanitarian.

After hearing with much interest Stiles' paper at Hot Springs a year ago, I was satisfied that there was such a disease in my locality, and awaited developments. A case soon presented itself in the person of a five-year-old girl. The prominent symptoms were anæmia, œdema, severe headache, and pain in the stomach, and were of such gravity as to cause the parents much uneasiness and to hunt the doctor. Stiles took the train and hunted up his cases. There are hundreds of cases in North Carolina that will not need to be hunted. They will hunt for us. One fact that led me to suspect Uncinariasis in this case was that I had treated an older brother of hers for anæmia a year previous. I asked for a specimen of the faeces, which was reported by McCarthy to contain the ova of the *Uncinaria Americana*. The color of the faeces in this case attracted my attention and would have established the diagnosis without the aid of the microscope. It was decidedly reddish, showing plainly the presence of blood. In no other case since, have I seen that pronounced reddish color of the discharges. Having established the diagnosis I gave the Thymol treatment and found plenty of small thread like creatures, but, never having seen uncinarias, I was not certain that I had what I was looking for. They correspond in length only with Stiles' description. If I were to describe the creature as to length, I would say that the *Uncinaria Americana* is a parasite, that is eighteen letters long and three-quarters of an inch short. My uncertainty lay in the fact that my find would not tally in size with Stiles' description as being the size of a hat-pin. I think a more correct description of their size would be the size of a No. 10 thread. In order to be certain of what I had I sent some of the specimens to Dr. Stiles, who promptly reported that they were the genuine article.

About this time a case was brought to me for treatment, the urgent symptoms being an inability to sleep in the recumbent position. It was a six-year-old girl, stunted, sallow, and so completely waterlogged, that she could scarcely breathe. I did not take time to make a test for uncinariae by the microscope, as I had previously discovered them in an older sister. There are six children in this family, and all of them, together with their parents are probably in the same boat. I mention this case to call attention to the prompt results of treatment. The child had not lain down to sleep for some time. The very next night after the Thymol treatment, she was much

improved, and the second night slept naturally as well as usual. Following this up with iron and arsenic, she was soon perfectly well.

In looking up probable cases of uncinariasis, I remembered a girl to whom I had given iron several times years ago. I went to her mother and, telling her what I suspected, inquired after her daughters health. She said it was good, and that she had not had any trouble since I had treated her five years ago. I called for the girl and found her to all appearances a victim of uncinariasis. She was undergrown, pale and peaked, but had no complaint that would call for treatment. I obtained a sample of faeces, and in fixing it up to send away for examination, I discovered, without looking for them, the mature uncinariae. It was of no use to send that sample away. Like Mr. Goat in the convention of animales, it had "done already voted." This girl was 13 years of age and had had uncinarias for five years without any impairment of health to attract the mothers attention. In three years more of time, however, that girl, when the time for menstruation comes on and she begins to do manual labor, (for she belongs to the working class) will need medical attention, and will need it for a long time, if the doctor should happen not to be posted on uncinariasis.

Only last month I was called ten miles in the country to see in consultation a patient in a family in which I had practiced some years ago. The trouble was uncinariasis, and the physician had recognized it and had given the proper treatment. He had been able to recognize it, because he had been present at a clinic I had held before our county medical society on the subject last fall. And here let me say, that this is the very best way to stir up interest in the subject among country physicians, who do not attend meetings like this. It would be well for some one to hold such a clinic before every county society in this State. I mention this case especially to note that there is a lethality attached to the disease, for the boy died a short time afterwards. He had one very unusual symptom, it being a femoral phlebitis with a very large, tender and painful leg. While in the house, a girl was called in for me to see and I found in her a former patient, whom I had periodically loaded up with Bland's pills. She was a pretty girl, but her face was like wax. Of course her trouble was uncinariasis and the way was perfectly clear to put roses into her cheeks. That was a large family of children, and all are probably infected, but only those two to the extent of producing disease.

Another family of three children I recall

as calling upon me often for Bland's pills; in fact, they had stated to me, that they could not get along without them, that they were as necessary as bread. On examination I found all of them with uncinariasis. As a rule I haven't gotten a very large number of uncinariae from the cases in which I have used treatment, but from each one of this family large numbers were obtained, one of them estimating the number as four or five hundred. A neighboring family to this, consisting of seven members, had always looked to me to be in bad health. One of them I tested for uncinariasis with positive results, and the reasonable conclusion is that the others have the same trouble. These people live on a little mountain stream, are very poor, and I believe that most of the people living in that valley have uncinariasis. Several other cases in different neighborhoods I have tested with positive results, but no individual mention of these cases is necessary except to give the number. Up to this time I have examined 20 suspected cases and found the disease in every case. Not a single examination has been negative. This experience conclusively proved to me that uncinariasis was very common, so common, in fact, that I began to have a lurking suspicion that possibly I might have the thing myself, and if I, why not my next door neighbor and my fellow-citizen around the corner. To my mind, just at that time, there was danger that dyspepsia might lose to uncinariasis the proud distinction of being the great American disease. Having had uninterrupted success in finding cases with uncinariasis, I concluded to change tactics and look for some one without it. I proposed to take and test a few cases from my practice in whom I have no reason to suspect the disease. This investigation, for lack of time, has not proceeded far enough to be of any value.

These twenty cases actually demonstrated in different sections of the county, with a probable twenty more cases in the same families, and all these from among the patrons of only one physician, show the disease to be a common one in Caldwell county. This county is not a sand district. It is right in the mountains, with a clay soil, with here and there a mixture of sand and clay on a clay subsoil. While I cannot speak authoritatively of other counties in Western North Carolina, I am not going to admit that Caldwell county is the only wormy county in the State. The condition there is only a fair sample of what will be found in other counties in the west, and as for that matter, over the entire State. That it is confined to sandy districts, as Stiles

concludes, I don't think will be proven by more general investigation. I think he reached this conclusion because he did not carry on any investigations in the mountain districts. The reported cases and published maps do not mean that it does not exist elsewhere.

The discovery of this parasite as the cause of disease will clear up for many of us cases that we have not heretofore understood. Review with me, if you please, a few such cases. In my early practice I was associated in partnership with an older physician, for whose professional ability I and every one had the profoundest respect. He had a case of anæmia with general anasarca. He made a diagnosis of valvular disease of the heart and gave the boy up to die. Another neighboring physician, for whose professional ability we had no respect, was called in, fixed up a lot of two-penny nails and vinegar and the boy went right on to recovery. That case in the light of present knowledge was uncinariasis. Now valvular disease of the heart may and does occur in uncinariasis, just in the same way that phlebitis occurred in the case I mentioned. But one of the most common complaints for which these patients will seek our aid is a supposed heart disease. Next to cardiac symptoms in frequency, we will encounter disorders of menstruation, in some cases amenorrhœa, in others menorrhagia. Only this month I saw a nineteen-year-old girl with proven uncinariasis, who had had menorrhagia for a month. All of these cases of uncinariasis, except the worst cases, can be much benefitted by treatment for anæmia, without the specific parasite treatment, but the benefit, of course, is not lasting, being the result of symptom treatment only.

Two years ago I saw in the country a child, who was pale and dropsical. I asked for a sample of urine, which I found loaded with albumen. My diagnosis was nephritis and a few weeks treatment with Basham's Mixture cleared the urine of albumen, relieved the waterlog and dispensed the pallor. Later in the summer I went through the same experience with an older brother, and the next summer had the identical experience with both of them. Both of these children had uncinariasis, for I have since examined them for it, and unmistakably found it. I also found it in the mother, and the natural supposition is that the other children are similarly affected. Within the past few months I have gone through the same experience, mistaken diagnosis and all, with two other children in different parts of the county. To-day, were I to see them, I would in short order make a diagnosis of uncinariasis and would

supplement the treatment I used with a few doses of Thymol.

Two years ago I went ten miles in the country to a woman in eclampsia. She was in the last weeks of pregnancy, was very sallow and dangerously waterlogged and altogether it was a most unpromising and discouraging case. My diagnosis was albuminuria of pregnancy. With the usual treatment she soon miscarried and recovered. I take the liberty now of changing that diagnosis. It was uncinariasis. How do I know? Well, because I saw her again three weeks ago. She was in the early months of pregnancy; her urine was not albuminous, but her appearance clearly indicated the disease and her faces according to McCarthy contained in abundance the ova of *Uncinaria Americana*. I propose with Thymol to make it my business to jugulate any such ordeal as we went through two years ago.

Ten years ago I saw a grown woman, who was in articulo mortis, when I first saw her. My diagnosis, as best I could make it, was valvular disease of the heart. To-day, if I should see that case, I would in all probability call it uncinariasis, for she was one of a family of children, in all of whom I have established such a diagnosis. Three other children of this family died during childhood. They were, according to the father, puny in the same way as the others and probably died of uncinariasis.

Sometime ago I was treating a bloated, anæmic five-year-old boy. Before he had time to show any improvement he contracted pneumonia, to which he rapidly succumbed. This case, in the light of subsequent developments, was uncinariasis, and but for that he would not have died from the pneumonia. Uncinariasis undoubtedly undermines the resistive power to disease and just as certainly increases directly and indirectly the mortality rate.

I know of no disease of like importance, that is so quickly and certainly relieved by treatment as is the disease we are considering, but I must confess that I am disappointed as to the permanency of results. Two of my cases first treated I tested for reinfection six months after treatment and found both of them reinfected. One of them showed marked clinical symptoms, the other, according to the mother, was perfectly well. Each of these cases was treated with full doses of Thymol three times till no uncinaria showed up in the discharges. It will be profitable for some one with a microscope to take a case and test it systematically at intervals for reinfection. My present view is that most of the cases, especially among children, ought to be given a course of Thymol at least

every three months. There must be a preventive as well as a curative treatment.

Hear, gentlemen, my conclusion.

Uncinariasis is among us.

It is among us abundantly.

It is a grievous burden to its host.

It is a menace to the neighbors.

It kills folks.

It makes mental underlings.

It makes physical dwarfs.

It curtails producing power.

It steals dollars from our wealth.

What are we going to do about it?

Asthma, Its Etiology and Treatment.*

By James Sawyer, M. D., Asheville, N. C.

Bronchial Asthma briefly stated is a neurotic affection, characterized by spasms of the bronchial muscles; a hyperæmia and turgescence of the mucosa of the smaller bronchial tubes, and a peculiar exudate of mucin. The essential predisposing cause is an abnormal condition of the respiratory centres, the exact nature of which is at present unknown. The paroxysm may be due to the direct irritation of the bronchial mucosa, or may be induced reflexly by irritation of the nasal mucosa, and possibly also indirectly by reflex influences from stomach, intestines, or genital organs through irritation of the pneumogastric nerve, or any of its branches of communications. Asthma is a term which is generally applied to certain conditions of dyspnoea (hence cardiac and renal asthma) but in reality its use should be limited to the affection known as bronchial or spasmodic asthma.

Etiology. Many theories are extant as to the cause of asthma, but we shall mention only a few of the most important and reasonable ones. Practically all the authorities agree that asthma is a neurosis. The theory long ago advanced by Trousseau, the chief advocates of which are Hyde, Salter and Biermer, is the most probable one, and is now more or less generally accepted, namely, that the spastic nervous element (which cannot be wholly disregarded in any explanation of bronchial asthma) consists of a tonic spasm of the muscles of the bronchi.

Many authors like Weber, Traube, Clark, and others, consider the underlying cause of asthma to be due to an acute swelling of the bronchial mucosa, as a result either of a sudden dilatation of the blood vessels arising from nervous influences or of a very acute catarrh.

There are others who consider that in many cases it is a special form of inflama-

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tion of the bronchial tubes. (The Exudative Bronchiolitis of Curschmann).

Many other theories may be mentioned and possibly have some weight, but the three mentioned above are those most generally accepted as being more nearly correct. Among the less prominent theories are those which attribute the attacks to a spasm of the diaphragm, or a reflex spasm of the respiratory muscles, to the Curschmann Spirals, the Charcot-Leyden Crystals, etc.

The fact lately corroborated by numerous observations of Voltinim, Frankel, Hack, Daly, Roe, Bartholow, and others, is most important, namely, that the asthmatic paroxysm is frequently of reflex origin, starting from some disease of the nasal mucosa. We find quite often that asthmatic patients are suffering from chronic diseases of the ear and nose, like chronic catarrh, nasal polypi, deflected septum, and especially the enlargement of the erectile bodies of one or more of the turbinated bones, and that after their removal the asthma disappears. In this connection may be cited the noteworthy fact that many asthmatic patients have an attack brought on by certain odors (as for instance the smell of ipecac, freshly roasted coffee, flowers, hay, etc.). Trousseau, who himself suffered from asthma, always had an attack on smelling violets. Hence hay fever is an affection which has many resemblances to asthma with which the attacks may alternate (hence the name "Hay-Asthma"). In the suddenness of the onset and in many of their features, these diseases have the same origin and differ only in site, as was suggested by Sir Andrew Clark, and is now generally recognized by specialists.

"Making due allowance for anatomical differences, if the structural changes occurring in the nasal mucosa during an attack of hay fever were to occur also in various parts of the bronchial mucosa, their presence would afford a complete and adequate explanation of the facts observed during a paroxysm of bronchial asthma." (Clark). With this statement I fully agree.

It is somewhat doubtful whether a pure bronchial asthma can have a reflex origin from other distant organs. The connection between asthma and disease of the pharynx, or hypertrophy of the tonsils, is more than probable in many instances, but the statements as the occurrence of asthmatic paroxysm in diseases of the stomach, of the intestines, or of the female sexual organs are to be taken only with great reserve. We usually have to do here with a confusion between pure asthma and other conditions

of cardiac weakness, "dyspeptic," dyspeona, etc.).

"In a large number of cases, which seems to us to be most characteristic, the disease can be explained, in our opinion, only by the hypothesis of a peculiar primary disease of the bronchial mucous membrane, particularly affecting the terminal twigs of the smallest bronchi; and whose special feature, somewhat like the spasm of the glottis in whooping-cough, consists in the occurrence of a reflex bronchial spasm. The whole type of the disease and the peculiarities of the expectoration, the spirals and crystals, furnish unequivocal testimony for this theory of asthma. (Strumpell).

Curschmann, therefore, holds that the anatomical basis of these claims is an "exudative bronchiolitis." He observes that in a majority of cases asthma is associated with an exudation, such as might be supposed to come from a tugested mucosa, and which is of a very characteristic and peculiar nature. The hyperæmia and swelling of the mucosa and the extremely viscid, tenacious mucus explain well the hindrance to inspiration and expiration and also the qualities of the rales.

In mentioning some of the general facts with reference to the etiology of asthma it will be noticed that frequently the affection is hereditary. That it runs in families and descends from parents to children and even to grand-children. Particularly is this so in those with very irritable and unstable nervous systems. It is common in families with a strumous or phthisical history, and in other families certain individuals may suffer from asthma and epilepsy in turn, or the asthmatic paroxysms may alternate periodically with neuralgic attacks.

The disease is most frequent from the second to the fourth decade, though it may begin early in childhood and last sometimes to old age. It may be contracted at almost any age. It is more frequent in men than in women (possibly two to one). Pulmonary affections have an important bearing in determining the asthmatic habit, either through bronchial irritation from atmospheric or other causes, or as a sequence of pneumonia, broncho-pneumonia, etc. One of the most striking peculiarities of asthma is the extraordinary varieties of circumstances which at times induce a paroxysm, and of these climate and atmosphere are most important. For instance, a person may be free in the city, and yet invariably suffer from an attack when he goes into the country, or into one special part of the country, or vice versa. Such cases are by no means uncommon. Breathing dust, or the air of a particular room, or place, may induce an attack, and as already mentioned,

odors (particularly of flowers and of hay, and of various animals) may cause a paroxysm.

Diet has an important influence, as an attack may be caused by overloading the stomach.

Gout, skin diseases, rheumatism, and the uric acid diathesis generally are frequent causes of an attack, each or any one of them alternating with attacks of asthma. Fright or violent emotion of any sort may bring on a paroxysm. Chronic cases, in which the attacks recur, year after year, gradually become associated with emphysema, and every fresh "cold" induces a paroxysm.

Occupation and mode of life have a certain influence, for while asthma is certainly more common among professional men who lead a sedentary life, and in general among the better classes with sensitive nervous organization, than among out-of-doors laborers, still it is often met with among the poor, both in hereditary and secondary form. High livers of full habit are prone to asthma, although the typical appearance of the chronic sufferer, is thin, high-shouldered, round-back, and nervous.

The treatment of asthma must necessarily be divided into the treatment of the acute attack and the treatment during the interval. When first called to see a patient with asthma he generally has an acute paroxysm, and immediate relief is necessary. To accomplish this the inhalation of chloroform, ether, or a nitrate of amyl pearl broken up in a handkerchief, or of fifteen to thirty drops of iodide of ethyl on cotton is frequently all that is needed. Sometimes a hyperdermic of morphine is indicated, or large doses of chloral or potassium bromide. Great care is necessary in exhibiting chloroform, stromonium, belladonna, and depressing narcotics, as they must not be used when the patient has a weak heart, and especially where the attack is due to a cardiac affection, as they are here dangerous. Morphine must be used carefully in order to prevent the forming of the morphine habit. Codeine may be used when morphine is indicated, but is debarred by reason of its causing nausea, vomiting, etc. Atropine does good at times, and may be combined with morphine. Strong hot stimulants or a dose of spirits of chloroform in hot whiskey, or Hoffman's anodyne, will sometimes induce relaxation. Cocaine applied locally to the nose in cases due to nasal abnormalities frequently gives prompt relief. The use of adrenalin hypodermically and by local application is oftentimes of great service. I have found it to be of real advantage in numerous cases, especially when there is a congested nasal

mucosa, and in "hay-asthma." Inhalation of carbonic acid gas has been useful in many cases. It is supposed to act by abolishing the reflex sensibility of the larynx, and has cut short the paroxysm when given during the attack. The sedative antispasmodics, such as belladonna, henbane, stromonium, and lobelia, may be given in solution or used in the form of cigarettes. Nitre paper made with a strong solution of nitrate of potash is very serviceable. Many excellent cigarettes are manufactured for asthma, and they do good at times. Most of them contain some plant of the order solanaceæ, with nitrate or chlorate of potash. Filling the sleeping room at bed time with the fumes from nitre paper or some of the asthma cigarettes or powders will sometimes ward off an impending nocturnal attack. In some patients tobacco acts as well as other forms of cigarettes, especially with those who are not accustomed to using it. Paraldehyde, thirty grains hourly, is recommended by Mackie. Citrate of caffeine is good in bronchial asthma, and in bronchitis associated with spasm of the bronchial tube. Free ventilation supplies fresh air and does good. Inhalations of oxygen are also efficacious at times. Strong coffee is worth trying, as is also nitro glycerine. When the stomach is overloaded after a hearty supper, the use of apomorphine as an emetic and expectorant will bring prompt relief, but this is contraindicated in the patient who is greatly debilitated or who has a weak heart. Wine of ipecac, lobelia, or antimony, may also do good.

The application of cold over the pneumogastrics in the neck, or to the upper spinal regions is sometimes successful in relieving the attack. Electricity (galvanization and faradization of the neck) will likewise give relief. Nitrate of sodium may also be used successfully. See advocates the use of inhalations of pyridin. Duenas recommends antipyrine, grains 15, every three hours, as being especially effective in anæmic cases, but it soon loses its power and does harm sometimes by increasing the severity of the subsequent attack, especially in cases associated with bronchitis. Penzoldt employs the tincture of quabracho, tablespoonful, pure or in emulsion.

Mustard plasters to the chest and calves and hot applications are sometimes useful, as is also the putting of the hands and feet in hot water, or the inhalation of the vapor of turpentine or ammonia. The use of the pneumatic cabinet may be beneficial. I have in several instances cut short an attack by the use of the inhalation of medicated vapors from a compressed air apparatus.

Finally, all the various idiosyncrasies of

asthmatic patients regarding the influence of light, darkness, temperature, etc., must be carefully considered, and oftentimes much is to be gained by giving the patient his "favorite" remedies, or those drugs to which he has been accustomed.

In considering the treatment during the intervals, we should remember that prophylaxis, both as to diet, hygiene, and habits, is very important. The stomach should at no time be overloaded. A carefully restricted diet should be insisted upon, and an abundance of fresh air supplied. The heavy meal should be taken in the early part of the day, and gastric digestion should be practically completed before retiring. When the attack is due to flatulence, the carbohydrates should not be allowed. All abnormalities of the nose and nasal pharynx (adenoids, polypi, swollen turbinates, etc.) should be treated and is possible eradicated by removal with electro-cautery, snare, chemicals, etc. Patients with the uric acid diathesis (gout, rheumatism, skin-diseases, etc.) should receive appropriate treatment with the alkalies, salicylates, etc., and any known cause should be removed, if possible. Emphysema may be somewhat relieved by the cabinet or compressed air inhalations for the respiratory gymnastics. "If the opinion of Landouzy that true asthmatics not infrequently have an element of tuberculosis is well founded, there is reason to think that other toxins also may promote the asthmatic symptom-complex; and especially the streptococcus toxine. Hence an explanation of the cure of asthma in certain cases by anti-streptococcic serum. (Boucheron).

Every precaution should be taken by the asthmatic patient to maintain the best possible bodily condition. All kinds of baths and out-door exercises are good. The bowels, kidneys, and skin should be kept properly active. Change of climate and scene is in many cases very advantageous. The Asheville plateau of Western North Carolina had been proven a very excellent resort for many asthmatic sufferers, who gained great relief here, and many are cured. Sometimes an ocean voyage is very beneficial. The benefit derived, however, is frequently proportionate to the improvement in the bronchial catarrh which has become chronic, or to the various chronic conditions which have been benefitted. Those who have been living at the seashore or about the sea level, it is well to send to the mountains, and vice versa. The same applies to inhabitants of the country, and of the cities and towns. The change alone frequently accomplishes much good.

Special efforts should be made to build up the nervous system and render it more

stable; and for this electricity, tonics, or anything else available or useful for each individual case should be persistently tried, since in asthma, as in tuberculosis, and many other affections, we certainly must individualize, and do so very carefully and thoroughly.

Of the drugs which have been used for the treatment of asthma it may truly be said that their name is "legion;" but the best and most reliable one is potassium iodide, in gradually increasing doses, and exhibited for a long time continuously—at least several months. When potassium iodide is not tolerated the syrup of hydriotic acid may be very effectively used. This or potassium iodide should be pushed to the limit of toleration, if necessary, before being given up as worthless. Fowler's solution and other forms of arsenic are also very valuable. Strychnine given hyperdermically is best for the exhaustion, dyspnoea and fever which sometimes follow a prolonged attack. Rest, systematic feeding, tonics, and stimulants, are also good.

In certain cases of "hay-asthma" so-called, and similar cases where there was an acute congestive condition of the nasal or bronchial mucosa, or both, I have obtained splendid results from the use of adrenalin (or the dessicated ext. of the suprarenal capsules, internally, and I should advise its trial in such cases.

Iron, quinine, sulphur, all kinds of tonics, alteratives, antispasmodics, sedatives, and "specifics," have been used, and some are undoubtedly of value, but we must be careful not to overdose our patient, and give only those things specially indicated. If we do this, and at the same time carefully watch the nose, throat, and ear for abnormalities, and remove them, get a thorough history of the patient's habits and tendencies, and appropriately treat them, and remove all known conditions that might cause the attack, by careful study of each individual case, there is no reason why our percentage of cures should not be reasonably large and satisfactory.

The Local Clinical Laboratory.*

By Martin L. Stevens, M. D., Asheville, N. C.

Intelligent treatment can be instituted only after a correct diagnosis has been made, and it is a recognized fact that there is no aid to diagnosis more sadly neglected than the aid of the clinical laboratory. But our physicians are not wholly to blame for this. Many of them were graduated before microscopy was taught practically in the schools and when many of the present laboratory

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methods were still unknown. The demands of a busy practice upon their time have not permitted all of them to take up these studies later. But each year our knowledge of the specific causes of the various diseases and of the pathologic changes which they induce becomes much extended, and with this extension of our knowledge our constant daily need of the microscope and the reagent glass becomes more imperative. Only recently the work of Councilman and his assistants has paved the way for the definite laboratory diagnosis of small-pox in the doubtful cases which have heretofore stood in the way of effective quarantine. Recently, too, the bacillary cause of one of the forms of dysentery has been established. The different Yellow Fever Commissions have added much to our knowledge of the specific cause of this disease. The bacteriology of the blood is receiving valuable contributions and the problem of immunity is being investigated with such ability and energy as presage the early solution of this enigma. And much work is being done that is interesting and of far reaching import. But it is not to these most recent advances that I would call special attention but to the more common conditions that the busy practitioner meets with almost every day and in which he needs laboratory data. He must know the urinary findings in the different forms of nephritis, cystitis and glycosuria. The presence or absence of Neisser's cocci in a vaginal or urethral discharge, and of the Kleb's bacillus in suspicious tonsil exudates. The sputum must be examined in every case of cough that continues over ten days, and in asthma; the feces in suspected uncinariasis; the blood in the different forms of anemia, in leukæmia, in suspected malaria and typhoid; in appendicitis, tuberculosis and the other diseases in which concealed pus formation is suspected; the gastric contents in dyspepsia and in suspected gastric cancer. In these and in many other every-day conditions the laboratory aids to diagnosis and prognosis should be called into constant requisition.

Many forceful illustrations could be given of the need of this much neglected aid, but reference to the confusion that constantly occurs in regard to the most common of the continued fevers and the indecision and errors that occur in diagnosing them and the manner in which malaria is made a pack horse upon which is saddled the responsibility for everything not otherwise readily accounted for is all that is sufficient. Malaria and typhoid may and often do present symptoms which at the onset are so identical that experienced diagnosticians are at the time unable to distinguish them. Nor

is it yet clearly established in the minds of all that there is not a mixed or mongrel type of these diseases. The intermittent fever of tuberculosis is also easily mistaken for malaria. Some may argue that it makes no difference whether the diagnosis is made at the beginning of treatment or later as the treatment would in many cases be the same any way. But it does make a difference. The physician has a greater duty than that of caring for his patient and restoring him to health. That greater duty is seeing to it that his patient does not constitute a source of infection to others. Feces and urine are not usually disinfected until the necessity for it is seen. Meanwhile the evacuations find their way into the water closet, the surface closet or onto the soil and may later infect entire communities. It is in this way that such frightful epidemics as the ones at Ithaca, Butler and Columbus are possible. We all admit the truthfulness of Pasteur's dictum: "It is in the power of man to drive infectious diseases from the face of the earth." For years we have known that Eberth's bacillus is the specific cause of typhoid and that proper disinfection of all typhoid excreta would soon check its ravages. But succeeding years show little diminution in the number of its victims, nor will they until we make general use of all the aids to diagnosis. This applies to other diseases as well as to typhoid. There is sad significance in the fact that of the cases sent to the division hospitals during the Spanish-American war and which proved to be typhoid only half of them had been previously diagnosed as such. We know that the regimental surgeons were as well qualified as the average physician who was not in the service, and this fact is not mentioned here for the purpose of criticising them, but only to illustrate the contention of this paper. The assertion is sometimes made that he who has not time to examine into the details of any given case has not time to treat that case as it should be treated and in consequence should not undertake it. In the general truthfulness of this statement we would concur. But with the busy practitioner circumstances will often necessitate the using of ways and means of economizing time. And just as the pharmacist and the trained nurse are called upon to prepare that which is prescribed and carry out the details of treatment so also will the clinical laboratory have to be called on to make examinations which lack of time, equipment or special skill makes it impossible for physicians to make themselves, and which in justice to their patients and to their trust as guardians of the public health they dare not leave undone. But right here is where a difficulty arises. Our

clinical laboratories are located in the large cities that are centers of medical education and are too far removed from us to be of practical service in the majority of our cases. Many specimens must be examined at the time they are obtained. Others are not properly prepared for transportation and arrive at the laboratory in bad condition. And in the majority of instances we want the report at the time instead of after a week or ten days as is usually required when the specimen has to be sent a long distance. Hence our plea—the establishing of clinical laboratories at home. In every county of the State there is need of one and work enough to support it. Particularly are they needed in the larger towns. In every county there are physicians who are especially qualified for laboratory work and who could devote a part of their time to it without conflicting with their regular practice. And in every county there are broad-minded physicians who realize the need of having this work done and who find it impracticable to do it themselves or to have it done by the laboratories located at a distance. Then why can we not have laboratories located where they are accessible to us? The scope of this paper does not permit going into details of the manner in which they might be established. We believe that if the physicians of a community are really interested in the matter ways and means will suggest themselves. Qualified individuals will take up the matter as private enterprises. Busy practitioners will employ capable assistants to do their laboratory work and from the income derived from work done for other physicians pay their salaries. Several physicians will unite in fitting out a laboratory to be used in common. And if necessary the county medical societies can take up the matter and devise ways of creating them. But at all events they are necessary and we cannot afford to be without them.

Scope-Diagnosis and Treatment of Neurasthenia.*

By Edwin B. Ferebee, Assistant Physician
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There are two nervous diseases of the functional class, par excellence, hysteria and neurasthenia. The history of hysteria shows a progressive tendency towards greater precision of thought, towards a limitation of the disease from the vague and misty circle of everything which, in some fashion or other, seems "hysterical," down to cases which (1) *are absolutely proven not to be organic*, and (2) present some of the *definite* criteria by which to-day we

reckon hysteria, the paralyzes, anæsthesias, etc.

The evolution of ideas in regard to neurasthenia has not yet proceeded so very far. Among all the innumerable symptoms which belong to "nervous prostration," the feeling of fatigue, the easy exhaustibility, the irritability and other emotional disturbances chiefly of the depressive type, the multifarious bodily pains and sensations and the fear of places and of what not—where are we to draw the line in order to obtain a more definite clinical picture? Wide differences of opinion exist. While for many, "nervous prostration" is *the* nervous disease of the age, for others it does not exist. Thus, Thomas J. Horder, writing in *St. Bartholomew's Journal* for 1902-3, Vol. X, p. 67, takes the ground that there are many symptoms of functional nervous weakness, central or peripheral, which do not fall into sufficiently definite categories to constitute a special disease, and are sufficiently summed up by the name "nervous debility." For him, neurasthenia is a multiplex symptom, or syndrome, some of the cases, especially the hypochondriacal ones, being really mental disorders, while others should be grouped under diseases of the several organs to which the symptoms relate, even though it be admitted that the condition is one of insufficient innervation of that organ. And when neurasthenic symptoms follow clearly traceable cause, such as influenza, trauma, sunstroke, calling the symptoms sequelæ of those conditions answers all present needs of medicine.

In such a maze it would not seem easy to get one's bearings, yet there is one method which can yield definite results. In regard to hysteria, Gower sounded the key-note when he said that the disease was not to be diagnosed—because the patient offered some symptoms which it was fashionable to regard as "hysterical," but only because it had been definitely established that the patient had no organic disease to account for the symptoms, and that in the examination every symptom of organic disease was to be allowed its full weight. What is true of hysteria is also true of all functional diseases. The only way in which the diagnosis of functional disturbance of the heart can be established, is as a disturbance for which the most rigid examination discloses no organic basis. This method, then, is the only sound clinical method, and it leads at once to the consideration of the question of how to conduct the examination of a patient presenting the symptoms of "nervous prostration." As regards the symptoms themselves, they might be said to cover everything, so numerous are they. This over-luxuriance has led to cases being

*Read before the recent meeting of the North Carolina Medical Society, at Raleigh.

classified into cerebral, spinal, cardiac, etc. It is, however, rather more important to recognize the more distinctive symptoms which are the fatigue symptom in all its various manifestations, as repugnance to exertion, and to any kind of thought, and its correlated symptom, the easy exhaustibility; the feeling of pressure in the head, frequently as though a band were drawn around the forehead; the uniformly, or predominantly, depressive mental tone, usually associated with irritability, the usual daily rhythm of worse in morning and better towards night—form a grouping to which associate themselves in every given case a host of more special symptoms which often dominate the clinical picture. These symptoms may in one case suggest cardiac, in another gastro-intestinal disorders; or they may be primarily suggestive of nervous disease, or they may involve the reproductive system, (dysmenorrhœa, abnormally frequent emissions).

As above remarked, nothing but a thorough examination will put one on the right track. And the examination must be thorough, and not one of the ear-on-the-chest and finger-on-the-pulse kind. It must be all embracing, and each organ must be passed in review as though it were the only one in which there was any question of disease. The heart, its outlines and the condition of the valves, but especially the functional capability of its muscle, for it is only their bearing upon this final question that gives to valvular and other lesions their importance. The lungs, especially for signs of early tuberculosis. The stomach, by inflation, for position and size. The intestines, for indigestion and putrefaction. The kidneys, for mobility, and for nephritis. Perhaps neurasthenia is as often indigestion as anything else; that is, an auto-intoxication from products of gastric, but more especially intestinal, putrefaction. At least such is the opinion of some who have had wide experience.*

The viscera having been passed in review, general diseases have to be sought for and excluded, especially early tuberculosis, cancer, exophthalmic goitre, gout, also the occupation poisonings, such as plumbism, etc. Also the condition of the blood in case any indication is found, should be investigated.

Having finished what might be termed the general examination, the examination from the standpoint of the neurologist is begun. There is no special mystery about it; only the conscientious following out of all the threads, any one of which may

suffice as a clue to lead the examiner out of the labyrinth into the clear light of day.

The central idea in a neurological examination, is the *constant comparison of points symmetrically situated on the two sides*. By this comparison, which can be made as detailed as necessary in the given case, we ascertain whether any difference exists in the action of the two sides, or in the sensation of the two sides. The power of the two arms, and legs, the grasps of the hands, the power of the extensors of the feet, (weakness of which in combination with absence of knee jerks, speaks for alcoholic polyneuritis), the symmetry, or asymmetry, of movement of the two sides of the face, of the eyelids, of the eyes in all directions, of the tongue—all these carefully tested without the disclosing of any difference, warrant one in saying that no defect of motility exists.

Similarly for sensation: Comparative tests of the two sides with light touches of cotton wool, the patient's eyes being, of course, closed, will reveal any departure from the normal. The special senses are then tested. The eyes for acuteness and extent of vision, (absence of construction of the visual field). The ears for the distance at which each hears a watch the other being closed, and, in case of defect, for the amount of hearing with the watch laid upon the skull (bone conduction, absent in nervous deafness). Finally pain, temperature, smell, and taste, can be similarly tested where any indication seems present. The reflexes are then examined into; the knee jerks being the type of the tendon reflexes, the planters that of the skin reflexes. Also the reaction of the pupils to light. Lastly, the power of the patient to co-ordinate, to stand with feet together and eyes closed, to button his clothes, to enunciate words distinctly, etc.

I have been thus explicit, almost I fear to the point of tediousness, because the neurological examination is too apt to be regarded as a thing apart, something beyond the possibilities of every day practice. Yet as I have tried to show there is really nothing in it beyond the power of any careful clinician. Indeed, if to the above scheme were to be added the ophthalmological examination of the fundus, and the electrical examination which is not often necessary, one would have everything carried out by the most exacting specialist.

There now only remains one group of affections with which neurasthenia can be confounded, the mental disorders. And, in fact, it is probably more often confounded with them than with other conditions; especially, with those lighter grades of mental

*Thus, F. Savary Pearce and H. Booker, express this view in *International Medical Magazine*, New York, 1902, p. 81.

disorders which do not find their way into the insane hospitals.

Among mental disorders neurasthenia is perhaps most often confounded with incipient general paralysis. Both may offer the easy exhanstibility, the dislike of work, the easy irritability; in connection, it may be, with a feeling of weakness, headache, insomnia, and vertigo. Here mistake in diagnosis can be avoided by recurrence to first principles, that neurasthenia shall be such only because it cannot be anything else. A careful search for bodily signs, inequality of pupils, (worth little by itself, but much in association with sluggish reaction on the dilated side), for absent knee jerks, for beginning speech defect; on the mental side, for evidences of slight but deep defects; the age and sex, and to a certain extent, a history of previous syphilis, and the fact that the general paralytic is quite apt to show a rather decided under-appreciation of his bodily symptoms in sharp contrast to the keen over-realization of the neurasthenic; also general paralysis is apt to lack an obvious sufficient cause.

The diagnosis is at times also quite difficult from beginning dementia precox (adolescent insanity, so-called), many of the long drawn out cases of which pass for years as neurasthenia. Here it is above all important to recognize the presence of a peculiar, progressive dementia characterized by weakness of judgment, (often exhibited in the bizarre nature of the hypochondriacal delusions), the emotional apathy, the poverty of thought, the loss of ambition, groundless laughter, and foolish, childish behavior; and, later on, the mannerisms, stereotyped actions, and negativism. Also the age is important, nearly all dementia precox developing before 25, while acquired neurasthenia is rare till after that age.

Also the lighter grades of the melancholias, those grades which rarely come under the alienist's care, are very liable to be mistaken for neurasthenia. Especially is this true of circular insanity. (Kraepelin's manic-depressive group). These cases are those of individuals who, during their whole lives are rarely normal; they are either above or below the plane of mental health; either unduly elated, or unduly depressed; unusually an alternation of the two. The recognition of this distinction is here of importance as suicide is much more frequent than with pure neurasthenics. In these cases of circular depression, (for it is chiefly the depressed phase which is liable to be mistaken for neurasthenia) medication has no effect, no improvement occurring until a change takes place in the emotional state, a change which is entirely

generated within, of itself, and without assignable cause. This fact, and especially the existence of previous attacks of a similar kind which upon "recovery" very likely passed over into a heightened emotional stage, suffice for the diagnosis, even though a sufficient cause may seem to be present for the individual attack. Then too, the proportionately more rapid development, and the predominance of the emotional tone, are important marks.

From hysteria the diagnosis should not be very difficult in typical cases; though there is, of course, nothing in either disease which renders the patient immune against the other, especially when both develop upon the same neurotic basis. Hysteria presents a number of somewhat definite marks; especially the paralyses and the anæsthesiæ, whose distribution and course (suddenly appearing, suddenly disappearing) are characteristic; convulsions, disturbances of the color sense, form a picture which when at all rounded out, ought not to be mistaken. Also the course in hysteria is far more changeable, in connection with emotional factors, than in neurasthenia in which there is a more uniform depression. Hysteria is, moreover, predominantly a disease of females, whereas neurasthenia is more common in males.

As regards treatment, it is more than probable that the examination will have disclosed indications, that is, that with our increased precision in examination methods, so-called simple, pure neurasthenia will become correspondingly rare. But supposing that the negative result of the examination leaves us in presence of such case, the treatment should embrace rest, and isolation, massage, electricity, and hydrotherapy, superalimentation, and drugs. Of these superalimentation is the most important, and the rest are really adjuvants, so to speak. Thus rest serves to diminish the demands for food during the earlier stages when digestion is feeble and the amount of nourishment that can be assimilated, is limited. The following is a sketch of the management of a severe case, given by Dr. Curran Pope in the *Inter. Med. Mag.* for 1903.

7 a. m. dripping sheet, temperature and duration according to the case; rest. 7:30, breakfast and tonic; rest. 9:30, manual, or mechanical massage for 30 to 40 minutes, glass of hot milk; half hour's rest. 1 p. m., dinner and tonic; rest for an hour. 3:30 general faradism for 30 to 40 minutes, glass of hot milk; rest.

6 p. m., supper and tonic. 8:30 to 9, general pack, or hot or cold sponge to spine, glass of hot milk, laxative or hypnotic.

In Dr. Pope's sanatorium a milder case receives :

6:30 a. m., glass of hot water. 7:30, regular breakfast. 9:30, mechanical massage, an hour's rest, recreation of a short walk. 12-1 p. m., rain, fan, jet, douche, etc.

1 p. m., dinner followed by an hour's rest. 4:30, gymnasium or short walk; rest.

6 p. m., supper. 7-8 p. m., static or galvanic electricity. 9 p. m., malt or hot milk, hypnotic or laxative.

The above schedule will show how the patient's day is charted out, so that he is kept occupied all day, if only at resting. The personality of the nurse in charge of such a case, is not unimportant. A tactful, resourceful nurse, one who can preserve an equable, cheerful demeanor, and can divert the patient from his gloomy forebodings and autoclinical observations, is a great desideratum. Such a nurse can do much to render the principle of isolation effective. The intent of that principle is, of course, the isolation of the patient from a circle of over-sympathetic friends with whom the comparative merits of remedies and the wonderful cures of Dr. so-and-so, are no doubt, matters of frequent cheering sick room conversation.

As regards diet, almost anything that will do for cases of gastro-intestinal disorders, will do for the neurasthenic. A simple, easily digested diet is the only essential. It may include roast or broiled meats or poultry, stale bread, cereals, eggs, most vegetables, light desserts, etc. It should, of course, especially avoid fried articles, pastries, difficultly digestible and easily fermentable articles such as lobster, crab, rich cakes, candies, etc. The main point in the dieting is to secure superalimentation, to get in just as much as the patient can digest. This is secured by a regimen such as that cited above, in which a glass of milk or of hot soup, is given between meals.

Besides the ordinary articles of diet, we have in this day of strenuous pharmaceutical activity, a number of food preparations, many of them partially pre-digested. A number of them are good. Horlick's malted milk is good. Somatose is good. Great claims are also made for the various wines of beef and iron.

The methods of massage are too well known to require any detailed description. The rubbing is begun with gentle, dry friction of the skin, which is gradually shaded into firmer and deeper friction and kneading until all the structures have been subjected to a thorough manipulation, the masseur working, of course, in the direct-

ion of the circulation. He begins with the limbs, and ends with the trunk. In the massage of the back the patient lies upon the abdomen with a pillow under him, and the masseur's hands are carried down the muscles on each side of the spine, and then spread outwards, the balls of the thumbs here playing the principal part. In the massage of the chest two principal movements are employed; a firm stroking following the ribs out from the sternum, and a deeper kneading in which the balls of the thumbs play an important part. Massage of the abdomen is begun with a kneading of the small intestines. Then the colon is followed out from beginning to end, and if constipation is present, the procedure is terminated by several minutes' tapping over the course of the descending colon with the palmar surfaces of the tips of the fingers, this procedure often succeeding where other manipulations have failed. The massage should occupy from a half hour to an hour, and should be followed by at least a three-quarter of an hour's rest.*

The subject of electricity in therapeutics is a somewhat mooted one, some claiming great results from certain methods of appliances, others believing that the effect is partly mental, partly due to the current being a convenient way of securing passive exercise with the associated improvement of circulation. For a detailed description reference must be made to the numerous works on electro-therapeutics.

Turning now to the question of hydrotherapy, if one has at his command all the resources of a modern day sanatorium, he is fortunate. Under those circumstances he can apportion neatly matters of temperature, and especially of force, of the water, and perhaps may thereby obtain more definite results. It is not, however, to be supposed that because one is not so fortunately situated that he must forego altogether the use of hydrotherapy. There is much that can be done in an ordinary bath room. With the patient seated on the edge of the tub, or kneeling in it, the hot or cold douche can be applied to the spine, and hot or cold sponge baths can be administered, while the packs can be carried out with a wet sheet wrapped round the patient, with blankets outside of it. Also saline can be used. Indeed, apart from regulation of force of jet and the minuteness of subdivision of it, which are, of course, not unimportant matters, a bath-room furnishes a fair "hydropathic institute."

I have now outlined the essential features of the rest treatment. In these days we are apt to think of it as the only one. The ex-

* T. Savary Pearce, *Int. Med. Mag.*, 1903, VII, p. 93.

perience of MacCoy is, therefore, rather interesting as showing what may be accomplished in circumstances where there is no possibility of carrying out the rest treatment.* As a dispensary physician MacCoy has dealt with a class of patients with which only a drug treatment was possible. And his experience is that a number are greatly benefited and recover entirely on no other treatment. Outside of medication the most he is able to obtain is a sponge bath daily, and increased air and sunlight, the value of which he inculcates particularly. The mental treatment is extremely important. The physician should impress his patient with confidence, make him believe that he understands his case, that he is going to get well, and when the setbacks come, as come they will, allow the patient to see that the physician is not discouraged, that he had counted them in advance, and that his opinion is changed. The patient should be instructed to talk over his condition with no one but the physician.

With drugs two symptoms are nearly the first point of attack, constipation and insomnia. There is no drug more valuable than the bromides in 10 and 15 grain doses with several drops of Fowler's solution. Under treatment it almost always happens that on the first return the patient shows distinct improvement, though naturally the treatment is no short one. It is important also that the physician take the patient into his confidence, to a certain extent, and explain to him the nature of the symptoms most complained of. This course, we might add, offers the best opportunity for the injection of hopeful suggestions.

When we turn to the question of drugs, we are practically beginning anew the study of materia medica. The relief of chronic constipation demands the use, above all, of cascara, (*rhamnus purshiana*) and of aloin, belladonna and strychnine; in connection with such measures as dieting, exercise, massage, and perhaps daily enemata.

For insomnia we have likewise a host of remedies; the greatest care being necessary not to form habits. For this reason it is well not to allow the patient to know what he is taking, if it can be avoided, and to change remedies every now and then. Where the sleeplessness is merely the result of "nervousness," bromides may suffice, or chloral, or a combination of the two. Later and better, though more expensive hypnotics are trional, sulfonal, paraldehyde, chloralamide, etc. They are good, especially trional and sulfonal. It might be mentioned that the very difficult and slow solubility of sulfonal involves one valuable

possibility, that it can be used where patients get to sleep rather easily but tend to wake up in the early morning hours. The maximum effect of sulfonal takes place about four hours after administration, and it thus serves to keep the patient asleep. I myself have had a favorable experience with Somnos, prepared by the H. K. Mulford Company. The average dose is a dessert spoonful to a tablespoonful. Its action too is manifested several hours after administration.

For the rest the drug treatment is that of any symptoms which arise. Perhaps the most frequent are those of the gastro-intestinal tract, due to auto-intoxication during digestion, faintness in the stomach, headache coming on an hour or two after eating and due to intestinal indigestion and putrefaction, often associated with gapping, extreme lassitude, marked mental depression, irritability, or perhaps over-powering drowsiness, etc. For intestinal indigestion the use of intestinal antiseptics, beta naphthol, salol, etc., are indicated. For cardiac symptoms, such as palpitation, small dose of digitalis and bromides to regulate the action produce relief.

These neurasthenics in which abnormally frequent nocturnal emissions are present, and which are much weakened thereby, and especially much disturbed mentally, can be relieved with certainty by chloride of gold and sodium, 1-40 grain t. i. d.; a remedy which we owe to Robert Bartholow. The dose is important, as a larger dose usually produces weakness of the vesicular seminales. It is probable that the remedy acts by toning up the mouth of these ducts, at least patients profess to feel such an action.

In conclusion it is a somewhat trite remark that there is no condition which, take it all in all, taxes more the patience and skill of the physician than the month in and month out successful management of a case of neurasthenia. Yet, it is a condition for which much can be done by the proper co-partnership of physician and patient. And, I might add, that there are few diseases whose skillful handling, more advances a physician's reputation.

Cholelithiasis With Special Reference to Surgical Treatment.*

By Alfred C. Wood, M. D., Assistant Professor of Surgery, University of Pennsylvania; Surgeon to the University, Philadelphia, St. Agnes' and St. Timothy's Hospitals.

After I had accepted the courteous invitation of Dr. Parrott to read a paper before this Society, I was confronted with the usual difficulty of selecting a suitable sub-

*MacCoy, Brooklyn, Med. Journal for 1903, Vol. XVII, pp. 399-401.

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

ject. I naturally had a desire to choose something that might interest the majority of my audience. With this thought in mind, I have taken a topic of practical rather than historic or academic interest. I was led to discuss cholelithiasis with you because my interest in this subject has been awakened recently by a personal experience in quite a number of cases. If a further justification of my choice be needed, I may refer to the commonly accepted statement that from 5 to 10% of all adults are affected with gall-stones. Kehr, without reference to whom no discussion of this subject would be complete, says: "In malignancy and insidiousness no disease of man compares with cholelithiasis."

This may seem a startling declaration to many of us, and yet no one is better qualified to give an opinion on this subject than its author.

We will be somewhat prepared for such a statement when we consider the complications to which biliary concretions give rise, as enumerated by Robson, whose name is inseparably connected with the history of modern gall-stone surgery. The list is certainly formidable, and is as follows:

Complications of Gall-stones.
(Robson.)

1. Ileus, due to atony of the bowels, enormous distension and symptoms of acute obstruction, apparently caused by the violent pain.
2. Acute intestinal obstruction, (a) paralysis of bowels due to local peritonitis (pericholecystitis); (b) volvulus of small intestine; (c) stricture of intestine, caused by bands due to gall-stones; (d) impaction of gall-stones in intestine.
3. General hemorrhages from chronic jaundice with or without cancer.
4. Localized peritonitis.
5. Dilatation of stomach due to adhesions about pylorus.
6. Ulceration of biliary passages and fistula in intestine.
7. Stricture of cystic or common duct.
8. Abscess of liver.
9. Localized peritoneal abscess.
10. Abscess in abdominal wall.
11. Fistula at umbilicus or elsewhere on surface of abdomen.
12. Empyema of gall bladder.
13. Infective and suppurative cholangitis.
14. Septicemia and pyemia.
15. Phlegmonous cholecystitis.
16. Gangrene of gall-bladder.
17. Perforative peritonitis.
18. Pyelitis on right side due to stone or abscess ulcerating into pelvis of right kidney.

19. Cancer of gall-bladder or ducts.
20. Subphrenic abscess.
21. Pleurisy or empyema.
22. Pneumonitis of lower lobe of right lung.
23. Chronic invalidism.
24. Suppurative pancreatitis.
25. Chronic interstitial pancreatitis.
26. Infective endocarditis.
27. Cirrhosis of liver.

This enumeration is probably not complete, but it is the most comprehensive I have seen, and certainly is quite sufficient to command our serious attention.

I must confess at the outset that I have no new facts to present, but trust we may mutually profit by reviewing that, with which you are probably all familiar.

I might have confined my remarks to some technical surgical aspect of this subject, but this would interest the surgeons only. Besides, the operative technique has advanced so much more rapidly than our diagnostic methods, that I desire to refer briefly to the latter.

Gall-stones, as you are aware, are composed chiefly of cholesterin, which may exist in a pure state, but it is usually combined with bile pigment, bile salts, lime mucus and degenerated epithelium.

Etiology.

Writers are almost unanimous, at the present time, in the belief that gall-stones form as a result of an infection of the biliary tract. This conclusion has been reached, partly because it has been shown that under normal conditions the bile is sterile, whereas microorganisms are almost always present in cases of cholelithiasis; but especially because Welch and others have found that in many instances the nucleus of a gall-stone was composed of colonies of bacteria. The manner in which this infection takes place has not been satisfactorily determined. Three possible sources are described:

- (1) Through the general circulation;
- (2) through the portal circulation from which the germs are eliminated by the hepatic cells; and
- (3) from the duodenum by continuity through the common duct.

The first of these probably furnishes very few cases. The fact that bile is usually sterile would seem to show that the liver cells do not under normal conditions, excrete living bacteria. It would appear, therefore, that some alteration of function or structure must take place before these cells allow germs to pass into the bile ducts.

It may be assumed that in the majority of the cases there is an ascending infection from the duodenum, especially as the greater number of cases are associated with

the bacillus coli communis or the bacillus typhosus. In this condition, however, we should remember that healthy bile is not a favorable culture medium for bacteria and that it flows more or less constantly into the bowel, against which current, the infecting organisms must be supposed to advance and in a fluid which, normally, inhibits bacterial growth. In addition, it is said that the duodenum does not usually harbor many germs, and we may also suppose that a normal papilla would be an effective barrier to their entrance into the common duct. Hence it is probable that some change in the duodenum or bile ducts precedes the biliary infection.

As showing the influence of bile on bacterial growth, Ehrett and Stolz injected cultures of streptococci into the gall-bladders of animals. They found the microbes thus introduced, disappeared rapidly, and after eight days the bile was again sterile. If, however, the cystic or common duct was ligatured, infection resulted and a cholecystitis was set up. Stagnation of the bile, therefore, seems to be an important etiological factor.

This is analogous to the observations of Guyon, who found that germs injected into the urinary bladders of dogs did not cause cystitis; but if the same experiment be carried out, and the urethra ligated in addition, so that the bladder became over-distended, infection promptly occurred.

Experiments have shown that gall-stones are caused by a mild, attenuated infection, such as would cause a chronic inflammation of the mucous membrane, whereas a severe or concentrated infection gives rise to an acute cholecystitis.

During digestion the bile flows from the liver directly into the intestine, and at the same time the gall-bladder should empty itself. Between the acts of digestion the bile collects in the gall-bladder. If this process is interrupted in any way, infection is liable to follow. Among the causes interfering with the proper emptying of the gall-bladder may be mentioned: prolonged fasting, atrophy of the muscular coat, which sometimes occurs in obese and aged subjects, the debilitating effects of fevers, and various mechanical conditions, such as swelling of the mucous membrane of the ducts from catarrh, malposition of the liver and gall-bladder (lacing), kinks of the ducts, pressure from tumors, adhesions, etc.

The solvents of cholesterol, glycocholate and taurocholate of soda, are said to be deficient in persons who eat but little nitrogenous food, hence farinaceous food may predispose, and meat diet tend to prevent. In diabetes, when farinaceous food is largely avoided, gall-stones are very rare; on the

other hand, they are frequently met with in persons who have gout, and who are not allowed much meat.

Gall-stones are seldom observed before the age of 30, and still more rarely before 20, although cases are reported where they have been found at autopsy as early as the eighth month. Women are affected three to five times as frequently as men.

Symptoms.

That gall-stones may exist without causing any symptoms is at the present time a trite statement. With these we have nothing to do in this connection.

In the cases that do have symptoms, the first and most prominent is:

Pain. This varies in different cases from a dull ache to a violent colic; it is usually paroxysmal, occurs irregularly and without apparent cause, often at night, and lasts from a few hours to several days. The characteristic seat of this pain is under the right costal border, or midway between the ninth costal cartilage on the right side and the umbilicus. It radiates to some extent over the upper abdomen, but especially toward the right scapula. This applies particularly to stones in the gall-bladder and cystic duct, uncomplicated with other pathological changes.

In cases of stones in the common duct, or of adhesions of the pylorus to the biliary tract, the pain may be felt in the epigastrium or even in the left hypochondrium.

A serious cholecystitis causes but a slight sense of pressure or pain in the region of the gall-bladder, lasting a few hours. An acute inflammation excites violent pains. Impacted stones give rise first to a severe colic, and later to a chronic distress, with exacerbations of pain due to a superadded inflammation.

Tenderness is present in all cases of cholelithiasis in which there are symptoms. The higher the grade of inflammation the more acute the tenderness will be. If the gall-bladder is affected, the point of greatest pain will usually be under the ninth costal cartilage on the right side. Stones impacted in the common duct give rise to tenderness in the epigastrium.

Tumor or enlargement of the gall-bladder may be observed. It is present in some instances of stone impacted in the cystic duct, in cases of hydrops and empyema and hypertrophy of the gall-bladder. Courvoisier says that 90% of all cases of enlargement of the gall-bladder are due to causes other than stone.

Vomiting frequently accompanies the attack of pain, and varies in degree with the intensity of the latter. It is more apt to occur toward the end of the attack and often seems to give relief, the relaxation

which attends the emesis probably favors the passage of the stone through the ducts.

Jaundice is not a common symptom of gall-stones. It is absent in almost all acute inflammations, also in the early stages of cholelithiasis. According to Kehr, it is present in but from 10 to 20% of the cases. It is a prominent symptom in common duct obstructions, although only about one-third of the calculus obstructions of the cholelithiasis give rise to this symptom.

Rigidity of the abdominal muscles, especially of the right rectus, will be present when there is a high grade of inflammation, particularly in pericystitis.

Fever. Some degree of fever is usually present during the acute attack. It varies with the particular type of the disease, and may be slight or very high. It is a prominent symptom of the high degrees of inflammation. Intermittent pyrexia is a common symptom of stones impacted in the common duct.

Chill. The cases accompanied by high fever are apt to be preceded by a chill. This, like the fever, may be of any degree of severity.

Enlarged and sensitive liver is present in some of the cases of long standing, but it does not occur, as a rule, as long as the disease affects the gall-bladder and cystic duct only.

Leucocytosis is usually present, the degree depending upon the extent of the local inflammation.

Clay colored stools will be present when there is jaundice, and sometimes in the absence of the latter; the prominence of this symptom corresponding with the degree of obstruction of the common duct.

Highly colored urine will be observed in the same class of cases.

Collapse. In the more severe cases the attack may cause collapse, and cases of death are reported from this cause, induced by the agonizing pain.

Diagnosis.

It is unnecessary to say to you that the diagnosis of cholelithiasis may be easy or exceedingly difficult. When we have associated typical biliary colic and jaundice followed by the presence of stones in the stools, a correct interpretation will always be made. Unfortunately, the problem is usually not so simple.

The clinical picture is confused and complicated in a hundred ways. We have only to bear in mind that the gall-stones may be located in the gall-bladder, cystic duct, common duct, hepatic ducts, or in all of them, that these conditions are associated with inflammation of the biliary tract, either acute, subacute or chronic, and then recall the numerous complications men-

tioned in the beginning to appreciate the wide range of symptoms which may thus be produced.

Among the conditions from which cholelithiasis will have to be differentiated, are the following:

Appendicitis, gastric, pyloric or duodenal ulcer, carcinoma of the stomach, pancreas or gall-bladder, renal colic, pancreatitis, acute indigestion, lead colic, diaphragmatic pleurisy or pleuro-pneumonia, gastric crises of locomotor ataxia, etc.

I will not detain you with an enumeration of the differential diagnosis of each of the conditions mentioned. This must be made by a critical study of the history of the case and a careful examination of the patient. We should ascertain whether there have been similar attacks previously, the exact manner of onset, the relation to the taking of food, the point of greatest tenderness and the direction of any reflected or referred pain, the presence or absence of fever or leucocytosis. The part complained of should be exposed, inspected and palpated, and at the same time a general survey of all the organs and of the individual in general should be made. In this way only can a correct conclusion be reached in many cases. On this point Kehr truly says: "The pathological anatomy of cholelithiasis forms the foundation for its special diagnosis and treatment, and without its exact understanding, we can neither frame good diagnoses nor initiate a rational treatment."

In this connection, I would like to urge when a physician sends a patient to a surgeon for operation, that he be present at the operation, if possible. In no other way can the pathological anatomy be as well understood.

Treatment.

Cholelithiasis is, I believe, a surgical disease and as such requires surgical treatment. This is not intended to indicate that every person should be subjected to operation as soon as a diagnosis is made. Some cases will be met with in which an operation may properly be delayed, and in others the general health of the patient will be such that any operative interference would be unjustifiable.

Many recent writers have endeavored to establish an analogy between the vermiform appendix and the gall-bladder, especially in regard to the surgical aspects of these structures.

Whilst I think important differences exist, there are undoubtedly many points of similarity, one of the most prominent of the latter being that medical treatment is irrational in inflammation of either organ. By medical treatment, I mean the giving of drugs, and allowing nature to take its

course. It will readily be granted that many patients recover if treated or maltreated in this way, but the greatest good to the greatest number will not be accomplished by this method.

Professor Osler, of Johns Hopkins University, several years ago directed that no case of appendicitis be admitted to his ward, maintaining that it was a surgical disease. This was an advanced position at the time, but longer experience has amply confirmed the wisdom of this decision.

I believe that a similar attitude toward gall-stones would be a long step, forward, because the surgeon, being familiar with the pathology of the disease from his observations in numerous operations, is better able to decide whether in a given case operation should be advised, than is the physician.

Writers on this subject are in the habit of detailing a number of conditions for which they advise operation. Kehr formulates his practice somewhat as follows:

1. Riedel's advice to operate early while the stones are still in the gall-bladder, is said to be sound theoretically, inasmuch as the graver complications of the later stages of cholelithiasis are prevented. He believes, however, that universal application of this principle in general practice is absolutely impossible, and hence without practical value.

2. If there are frequent attacks of biliary colic which undermine the general health and interfere with the pursuit of the patient's occupation, an operation should be performed.

3. Cases with jaundice which have not been benefitted by medical treatment and in which the vitality is evidently becoming depressed "and no hope be present for the passage of all the stones, the propriety of the operation is established."

3. Distension of the gall bladder, whether the fluid be sterile or purulent, requires surgical treatment, as do also pericystic abscesses. Exception is made of those examples of simple hydrops which give rise to few symptoms, the operation being delayed until the distress increases.

5. Surgical treatment should not be postponed too long after the failure of the Carlsbad cure.

6. Patients who have become addicted to the morphine habit as a result of the pain should be subjected to operation. This will afford the best opportunity for the cure of the habit.

7. Carcinoma of the gall-bladder can be treated radically only if the operation be performed in the earliest stages; as, however, many patients refuse operation until the seriousness of their condition forces it

upon them, but few cures will be effected.

8. Patients suffering from chronic jaundice due to causes other than stone in the common duct, or incurable disease of the liver, must be operated upon not later than three months after the appearance of the icterus.

9. Patients presenting a tumor of the gall-bladder, a swollen liver, jaundice and fever, should be advised to submit to a prompt operation. The same may be said of the cases with severe and continuous symptoms, even without demonstrable local changes after the failure of medical treatment. In such cases the symptoms are often found to depend upon adhesions without the presence of calculi.

10. The sequelæ of cholelithiasis, such as purulent cholangitis, abscess of the liver, peritonitis, subphrenic abscess, pyloric and duodenal stenoses, and ileus, require operation.

11. Each case must be decided upon its own merits.

This is after all the only basis upon which we may reach a rational conclusion. A great many factors must enter into the consideration. We must first endeavor to establish the degree of seriousness of the condition and the probable course of the case if treated conservatively. Would the patient's prospects be better if subjected to operation?

We must next consider the operative dangers. These would be infinitely greater in the presence of serious organic disease, such as nephritis, diabetes, advanced cachexia from malignant disease, profound icterus of long standing, and ill health and poor vitality in general.

My own view is that when gall stones have given rise to sufficient trouble to permit of a definite diagnosis the patient should be advised to submit to an operation for their removal provided there were no pronounced contra-indications. This does not refer to the very first attack, nor to immediate interference, as it will be proper in many instances to await more favorable conditions. When, however, gall-stone disease has become established, there can be no sound reason for waiting until the health is undermined, the patient's earning power destroyed, and until everything else has failed before the operation is performed, unless other conditions contra-indicate operation. And it is immaterial whether the condition be hydrops, empyema, calculus, adhesions, or a complication of these or other conditions, when the patient's health is threatened or comfort destroyed we should not longer withhold the chance of operative relief. In the meantime, simple cases would frequently become

complicated, the mortality of the operative interference would be greater, and structural changes may have occurred which are beyond hope of restoration. We have only to glance at some of the specimens of gall-stones to be impressed that the efforts of nature, even when aided by the best medical treatment, must usually be unsuccessful. Of course, it is not for us to go further than to advise. We must admit with Kocher that "gall-stones are the property of the patient, and if he prefers to treat them and drink Carlsbad water on top of them, that of course, is his privilege. * * * And if the patient choose to let the stones work through *per vias naturales* amid pain and misery, why, that too, is his individual pleasure."

Even if the patient were willing to submit to all this, it must still be remembered that the stones do not always select the natural passages when they work through.

I shall not discuss the medical treatment, which, as has been stated, must be employed in a number of cases, and which has definite, even if limited indications. This is described in all text-books and is no doubt familiar to you. To strengthen my position, however, I will briefly quote from two writers:

Brockbank says: Not one new remedy of any great value has been discovered in the last 150 years.

In 1757, Coe recommended the following treatment for cholelithiasis: Calomel, opium, oil of sweet almonds, soap in large quantities, mineral water, (Spa, Pymont, and Bath). He insisted on exercise, such as walking and riding. If patients could not afford a real horse, he advised making a dummy or chamber horse for the construction of which he gave directions. Abdominal massage, especially over the right hypochondrium, he thought well worth trying several times a day. If all failed, incision was to be made in the gall-bladder and then remove the stones. Such incision was only to be made, however, if the gall-bladder was adherent to the abdominal wall, otherwise, the escape of bile in the abdomen would be fatal.

At the present time, we would probably not administer soap, although one can imagine the theory upon which its use was recommended; massage might be injurious by causing impaction of a stone in the ducts, and the very restricted indications for operation would not hold to-day.

It has been the fashion for some years to send patients with cholelithiasis whose means would permit, to Carlsbad for treatment. Perhaps no better advice could be given, provided the case is not suitable for

operation, or if operation is positively refused.

As to the value of the Carlsbad treatment, Krauss, than whom, perhaps, there is no higher authority, and who when he wrote in 1896, had seen 2800 cases, says: "With the exception of a few cases, patients during their stay at Carlsbad, adhere pretty strictly to the diet prescribed for them. But how few have sufficient self-control and perseverance to continue such a diet for years; and yet this is an indispensable condition for perfect restoration to health, which means restoration of the bile to its normal state, and keeping it in such condition." In other words, one must become a chronic invalid for several years to be cured by conservative measures. This seems to me a rather severe arraignment of what is universally admitted to be the very best medical treatment, and from one who might be considered one of its ablest supporters. Such a view is, however, quite readily comprehended when we look at the calculi and consider the havoc which they produce.

Operative Treatment.

One cannot predict, as a rule, just what measure will have to be carried out until the abdomen has been opened and the gall-bladder and its ducts exposed. A liberal incision is essential for a proper diagnosis as well as for the best operative technique. In this way only can the whole biliary tract be examined satisfactorily and the necessary manipulations be carried out under the eye. A narrow, hard pillow placed under the dorsal region of the patient, brings the structures involved nearer the wound and facilitates the work very much.

Calculi in the gall-bladder, with or without the presence of fluid, may be treated by incision of the gall-bladder, followed by suture to the abdominal wound, cholecystostomy; or by removal of the gall-bladder, cholecystectomy. My preference is distinctly in favor of the former, especially if infection is a prominent factor in the case. If the gall-bladder is shrunken and cannot be brought to the surface, or if the cystic duct is occluded from stricture or otherwise, excision would be proper. The tendency of some operators seems more and more toward cystectomy in all cases, but I think this procedure should be reserved for definite indications. Ideal cholecystotomy, a term employed to describe removal of stones from the gall-bladder followed by immediate closure by suture, has constantly lost in favor and is not to be recommended.

Stones in the cystic duct may be removed through the gall-bladder, or if impacted may require incision of the duct, or

cholecystectomy. If the duct is incised it should be sutured, if possible, and the gall-bladder drained.

Stones impacted in the choledochus will usually require incision of the duct, in which case drainage by means of a rubber tube and gauze packing is preferable to suture; or they may sometimes be forced forward into the duodenum or back through the cystic duct into the gall-bladder. Care must be observed, however, not to loose the calculi in the hepatic duct. Crushing and "needling" calculi will rarely be required. Obstructions of the common duct that cannot be removed, such as carcinomas, strictures, etc., require anastomosis of the gall-bladder with the bowel, cholecystenterostomy.

The various complications must be dealt with according to the necessities of the individual case. No operation should be concluded until the gall-bladder and the bile ducts have been thoroughly inspected and found to be in satisfactory condition, or until the necessary treatment has been carried out.

The mortality following simple cholecystectomy has been reduced to about 2%; after cholecystectomy it is above 3%; operations on the common duct, 6 to 15%. The death rate constantly rises as the complications increase. What stronger argument could one wish for early operation?

In conclusion, let me quote from Robson, who says: "That with due skill and adequate care, operations on the gall-bladder and bile ducts are among the most successful of the major operations."

Acute Ileo Colitis.*

By Guy Smith Kirby, M. D., Marion, N. C.

At this season of the year, as well as later on in the summer months, we sometimes have very severe cases of this disease and in preparing a paper for discussion on this subject, I do so fully aware of the vast amount of literature giving causes and treatment (especially treatment).

Ileo Colitis may be secondary to any of the infectious diseases, particularly measles, diphtheria, and broncho-pneumonia, but I only want to mention primary cases in infants and children up to the fifth year, as I have treated a greater number of cases at this time.

Etiology.—By taking food in which poisonous products have been formed by bacteria, sudden reduction of temperature by exposure to cold or drafts causing the blood to congest the bowels, by irritating substances, such as unripe or stale vegetables, improperly prepared and undigested food.

Foreign bodies also enter in as in one of my cases. Boy, age 3, swallowed car-seal with about one-half inch of the wire attached, which set up a violent entero colitis. The most common form and the only one I will mention is the Acute Catarrhal Ileo Colitis.

General Symptoms.—Onset usually sudden, pain, fever, vomiting, with frequent stools which differ in character, but are generally yellow with streaks of green and often containing undigested food, followed by mucous and then blood and mucous. At this stage there is very little color. As the disease progresses, in two or three days the stools become jelly-like and change color slightly. Abdominal pain, tenesmus and great thirst are now present and temperature lower than at onset. This usually lasts from five to eight days and then the stools contain gradually more fecal matter and in the course of ten days more, the patient has about recovered. It is now very important during this later stage of the disease to look carefully for ulceration, especially if there continues to be slight fever.

General Treatment.—(1) Pay strict attention to hygienic surroundings.

(2) Cleanse the bowels of the bacteria and their products and to render the bowel as unfavorable as possible for their production.

(3) To lessen the irritated and inflamed condition of the bowel.

(4) Watch carefully the constitutional symptoms.

Cleanliness should be observed in child's person and clothing, a light flannel gown worn during the day is generally sufficient, fresh air is of the utmost importance, and the bath for the reduction of temperature if over 102 degrees.

First cleanse the stomach and intestinal tract by a purgative, and for this I use calomel in one-tenth grain doses, given every hour until five doses are taken, then every hour or two until one grain is given, followed by castor oil in teaspoonful doses every two hours until bowels move freely. As important as cleaning the bowel at the outset is to give it absolutely nothing to do for twenty-four hours, withhold all food and give two or three tablespoonfuls of albumin water every two hours, and if there is much prostration diluted brandy with plenty of water. Antiseptic mixtures are generally well borne and do good. When irritability continues large doses, fifteen to forty grains of bismuth subnitrate every two or three hours. Opium to be given only when pain is severe or for too frequent stools, the danger of opium in stopping the peristaltic action of the bowels is well known, but it will be well for us to always keep it in mind.

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

Irrigation of the colon is at all times of benefit, as it causes the bowel to move at once and removes offending material.

Case I.—An infant fourteen months old, fed on a modified cows milk, found temperature 102, vomiting frequently, very sour smelling, abdomen distended and relieved slightly by the passing of gas, diarrheal movements contained mucous, greenish color and later on attended by pain with attacks of blood and violent straining, developing acute ileo-colitis.

Discontinued all food, evacuated stomach and bowels, employed cold bath for the reduction of temperature, calomel in one-tenth grain doses until one grain was taken followed by castor oil and high irrigation of the colon, this continued twenty-four hours, then commenced with peptonized milk two tablespoonfuls every hour or two followed by a mixture of bismuth subnitrate, Tilden's antiseptic, tincture opium, (deod) with maltopsepsine. Patient seemed to recover rapidly and was dismissed in about ten days. One week later was called again for a slight return of the same trouble, and going through with the first part of the above treatment I gave the following prescription and carefully regulated the diet with good results.

Bismuth sub-nitrate, two drachms.
Co. tr. Catehu, two drachms.
Tr. Opium (deod), m 22.
Glycerine, two drachms.
Aromatic Syrup Rheubarb, three drachms.
Cin. water qs ft, two ounces.
Teaspoonful every two hours.

Case II.—A child three and one-half years old. Complained of a very severe pain in the bowels over region of the appendix. Temperature 101. Tongue slightly furred, had vomited several times. Could not straighten right leg, kept it well drawn up. You can readily imagine what my diagnosis was, especially on examining the little fellow closely I found a decided enlargement where pain was located. Parents would not consent to an operation.

Gave large dose of castor oil, followed by high enema, applied hot flannel clothes and poultices. Six hours after giving the oil, etc., had several movements of the bowels which was very painful and the enlargement disappeared, with a great improvement in the symptoms. On the day following, began to develop acute inflammation of the bowels, a very slight enlargement again reappeared, discharges containing mucous and blood and very frequent, with thirst and great pain; temperature 101 to 104. This continued for six or eight days, when one morning, on giving an enema of

warm olive oil I removed nine prune seed from the bowel.

Case III.—Boy five years old. When first seen had a pronounced and well developed case of cholera morbus. Vomiting and frequent discharges. Small doses of calomel at once administered to control vomiting, followed by one-half grain doses and magnesium sulphate.

There was no further trouble at this time, until three days later, when I was again called. This attack was due to eating a large quantity of chestnuts. After clearing the bowels the diarrhœa continued and in twenty-four hours contained blood and mucous and later on shreds of membrane; temperature became high; thirst excessive, as was also the vomiting; crushed ice was given freely, and to check the vomiting a powder composed of the following was given every hour:

Bismuth sub-nitrate, grs. 2.
Cerium oxalate, grs. 2.
Cocaine, grs. 1-16.

The cold bath was employed to reduce temperature with irrigation of the colon, to check the too frequent discharges, large doses (forty grains) of bismuth sub-nitrate with salol was given. This acted nicely and after several hours commenced with albumin water and peptonized milk, followed by animal broths.

The child made a slow recovery and I had his mother bathe him with equal parts alcohol and cod liver oil, rubbed well in the skin twice a day, and prescribed syrup iodide of iron with increasing doses, which proved very satisfactory.

What Laboratory Work Should Be Done By the Physician Himself? *

By W. H. Prioleau, M. D., Asheville, N. C.

Specialism in medicine has its drawbacks in proportion to its many virtues. When a specialist locates in our midst the comfortable feeling that a higher authority is present, to whom we can appeal in case of doubt, is truly an agreeable sensation. But while such a state of affairs is full of advantage in times of necessity; at other times, there lurks great danger in his presence, for the tendency is to throw ourselves upon him at the slightest opportunity. Too often we send cases to the specialist which we could and would treat ourselves if no specialist were at hand. I am a firm believer in specialism; but I also believe in a general practitioner having sufficient knowledge of medicine and surgery to enable him to treat the minor diseases of all organs of the body without consulting a specialist. However,

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

in making this statement, I must emphasize one essential fact, that is, that the general practitioner know his limitations—better that the physician send all of his patients to specialists, than that he should undertake to treat a case knowing full well that he has not sufficient knowledge to do so.

But to the point of this paper: it is the private laboratory to which I especially allude. In our medical journals we see advertisements of laboratories to which pathological specimens, urine, sputum, etc., can be sent for examination and diagnosis. These laboratories are of eminent value to general practitioners, for there are many cases which demand the services of an expert pathologist. However, as the vast majority of cases do not demand an expert's opinion, but only a little extra work for the physician, one can readily see that if a doctor makes a habit of sending all his analyses and examinations to the laboratory he will soon be in such a position that he could not make an analyses, even if he wanted to. A general practitioner should have his office so equipped as to be able to make for himself the ordinary analyses and examinations that occur in his daily practice. For instance, as regards,

Sputum.—He should be able (1) to differentiate the staphylococci and sheptococci the tubercle bacillus and the diplococcus pneumoneal; also (2) to recognize red blood corpuscles, leucocytes, elastic fibres, pus corpuscles and epithelia.

Blood.—(1) Make the blood count, both red and white. (2) Estimate the hæmoglobin. (3) Recognize the plasmodium materials and the filaria sanguinis hominis. But when the Widal test is to be made, the blood should be sent to the laboratory; not that the physician could not make it himself if he had the typhoid culture, but because few of us have the culture, and because the laboratory has it, and is prepared for such work. To have the various stains is one thing, but to keep cultures growing is quite another, and only a laboratory properly equipped with an incubator, etc., can do so.

Next as regards the urine. Both the chemical and microscopical analysis should be made by us in our offices. Taking the 24 hours specimen, use the deposit for the microscopical examination and the supernatant fluid for the chemical analysis. By doing so we gain a knowledge of our patient's condition, such as no laboratory report can give—we see the conditions for ourselves as they exist.

In examining the urine for pathological germs, we are chiefly concerned with the tubercle bacillus and the gonococcus. The

latter is easily found in the expressed secretion from the urethra, and hence there is no necessity for examining the urine. To find the tubercle bacillus in the urine is difficult, and if after repeated examinations of the washed centrifuged sediment we cannot find it, then we must appeal to the laboratory for assistance. Take a specimen of the urine and send it to the laboratory, to be injected into a guinea pig. In due time the pig is killed and his organs examined for tubercles. As with typhoid cultures and the Widal test, so with the guinea pig and the tubercle bacillus, we have not the time or the apparatus with which to keep the cultures growing in our offices, neither have we the conveniences for keeping guinea pigs.

Fæces.—Far too little attention has been paid in the past to the examination of fæces. If we examined the fæces oftener we would soon realize the importance of such work. Oftentimes we gain information from such examinations, which we could not get elsewhere; for instance we may find segments of tape worm, a round worm, seat worm, hooklet of the tænia echinococcus and the *Uncinaria Americana*, or *auchylistorus duoderales*.

Water.—The simpler tests for water can be carried out in the office, for instance the detection of hard or soft water, also wherever the chlorides are in excess. But when we want an analysis of the water to find out the amount of organic matter present or to find out if any pathological germs are in it, then we must send a sample to the laboratory. Also in case of poisoning, where the water is supposed to be the cause, then we should not undertake such an examination in our office, but submit it to the chemist.

Milk.—The purity of milk can for all ordinary purposes, be determined by using the lactometer and the creamometer; for the dilution of milk with water and extraction of cream are the tricks most practiced by the dairymen. But for milk suspected of holding infectious material or of having a preservative, such examinations should be made at the laboratory.

Stomach Contents.—From the test made and subsequent stomach washing we can gain valuable information as regards the presence, excess, or absence of free hydrochloric acid by washing out the stomach we may detect the round worm, or possibly a piece of a tumor or some blood corpuscles. Should the case be one of poisoning, it is wiser to send the stomach washings to an expert, and in case of an autopsy where poisoning is suspected, always send the stomach and its contents to a laboratory.

Tumors.—The examinations of tumors is

not always possible in one's own laboratory. He may examine the scrapings, but when a specimen has to be hardened by freezing or with Conde's fluid before examination, then it should be sent to a pathologist. Not that the physician cannot do it himself, but because work such as that takes time and special instruments, such as a busy physician cannot give or does not have. One is only occasionally called upon to examine a tumor, so it will pay better to give the examination to one who does such work daily, than to go to the outlay of equipping the office for such work. There is and ought to be sufficient work for the expert pathologist, but a physician should be able to do the more simple work himself. By making his own examinations, he will be able to tell the condition of the patient according to his own ideas, and also impart the patient's disease to no one else—in other words, keep the patient's secret.

From a financial point, it would be the physician's gain to do his own laboratory work, and it would cost the patient less. The specialist should be paid well for his services, and for that reason only such examinations as are worthy of his fee should be sent to him.

One often claims that he is too busy to do laboratory work, and that it takes up too much time. As a matter of fact laboratory work, such as I have sketched above, takes very little time, provided the physician knows how to make the tests and use the microscope. By doing our own work we would become better practitioners and our patients would be better pleased.

In conclusion, I want to reiterate what I have said, viz: learn the simpler methods of making analyses and examinations, use them in your own laboratory and send the more obscure or difficult cases to the expert pathologist and chemist.

Interstitial Keratitis and Trachoma.

By J. H. Honnett, M. D., Wilmington, N. C.

A brief outline of means to recognize and treat interstitial keratitis and trachoma may be of some use to general practitioners so located that the service of a specialist is not conveniently available. These conditions are responsible for many cases of scarred cornea and other obstructions in the normally clear refractive media of the eye, and are doubly sad for the fact that with simple means—those means within the reach of any practitioner they could be checked in their pernicious course, and the resulting scars and opacities lessened. Interstitial keratitis is in almost all cases a heredi-

tary specific taint. The inflammatory deposit is deep in the substance proper of the cornea, and presents when viewed in ordinary light the so-called "ground glass" appearance. The surface is smooth in contrast to the more superficial varieties of keratitis, which are attended by more or less ulceration. The facies of this condition is most characteristic and fairly constant, and taken with the corneal condition makes the diagnosis clear. The forehead is broad and flat, the bridge of the nose sunken, the nostrils thick and flaring and there are ridges about and on the lips. The teeth are those described by Hutchinson as peg-shaped, broader at the base than at the cutting edge and usually spoken of as notched. This notching Dr. R. G. Reese shows not to be characteristic, nor constant. It is more common during the second dentition. The patient enters the room giving evidence of intolerance to light, and there is quite often the odor of atrophic catarrh. Family history, specific disease and sequelæ. If patient be put on one of the mercurials and potass. iod. in increasing doses and the tonic regime as iod. of iron, we will be gratified by seeing the cornea clear to a great degree, leaving perhaps slight scars interfering but little with the vision. If seen during the acute stage shown by injection of the blood vessels surrounding the cornea, atropine, 2 grains to the oz., one of water, two drops of this solution to be dropped in the eyes three times a day is advisable, and the eyes are to be bathed every two hours with water as hot as can be comfortably borne. After acute stage has passed an ointment yellow oxide of mercury is to be rubbed in the eye once daily.

Trachoma.—Trachoma, or Egyptian ophthalmia, or granulated lids, as ordinarily seen, is a chronic follicular inflammation of the conjunctival lining of the eye-lid. On everting the lids, small sago like lymphoid follicles are seen, varying in degree from a few discreet follicles to a great raspberry-like mass reaching almost to the margin of the cornea, or a membranous variety, seen in Italians.

Trachoma is said to be highly contagious, and caused by an organism not yet isolated. Important ætiological factor is undoubtedly the soil prepared by uncleanness. Therefore, trachoma is far more frequent in the foreign districts of large cities, but occurs often enough in this and like sections to render it vastly important to check its pernicious progress. If untreated common distressing sequelæ ulceration of the cornea and pannus supervine. Pannus is a term for the formation of new blood-vessels in the superficial layers of the cornea, due to friction and pressure from

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the lids. If these cases so easily recognized be put in correct hygienic surroundings and the follicular surface rubbed with bichloride of mercury in a solution of 1-500 every other day and the solution of zinc sulphate, two grains to the oz., two drops to be dropped in the eyes three times daily be ordered, the follicles slowly disappear. Should the cornea already be damaged it will often improve by treating the lid. Canthotomy or slitting up of the outer angle of the lid is of value when the cornea is threatened, for it removes the pressure. Should the follicles be large and discreet, a great deal is accomplished by scarring the surface with an ordinary scalpel. Squeezing out of the follicles with forceps specially devised for this purpose is invariably followed by benefit. One of the oldest and best authorities and others apply the blue stone pencil to the follicle. Dr. Reese points out that this is followed by scarred tissue in contrast to the perfect results when bichloride is used. Silver nitrate has been used, but too much discoloration resulted. In conclusion, I repeat, that while trachoma is not of the vast importance in the smaller towns and country as in the great congested cities, cases spring up here and there where sight itself may be saved by the simplest measures.

The Present Position of Ethylchloride.

Luke in The London *Lancet* gives his views on this subject as follows: (1) Ethyl chloride is a pleasant anesthetic to inhale, extremely rapid in action, very portable and inexpensive. (2) It compares favorably with nitrous oxide as regards induction of anesthesia and available period: it produces no cyanosis, when used in suitable doses, and necessitates the carrying of no heavy and cumbersome impedimenta. The advantage of this to the general practitioner and dentist in the country is obvious. (3) The technique of the administration is very simple. (4) While not as safe as nitrous oxide in the hands of the unskilled, we are justified in concluding from the material available that it is safer than ether, all things considered, and much safer than CHCl_3 , or bromide of ethyl. (5) It can be safely re-administered at one sitting, this being a further point in its favor over bromethyl. (6) It is not usually followed by marked after-effects. (7) It is preferable to nitrous oxide when the patient is very young, very old or anemic, while those who are suffering from cardiac, renal, or lung affections take it quite well. (8) It is in no way to be preferred to CHCl_3 or ether for prolonged anesthesia, but may be used with advantage merely to induce anes-

thesia which is maintained either with CHCl_3 or ether. (9) For minor surgery, throat operations, and the extraction of teeth it is the best anesthetic available at the present time. (10) Pure ethyl chloride, sold as such, is always preferable to proprietary preparations and to mixtures. (11) In conclusion, one of the strongest claims of ethyl chloride to being considered a fairly safe anesthetic lies in the fact that during the past twelve months it has been experimented with wholesale throughout the country, and yet no death has been recorded. It is quite possible that we may hear of one or two from time to time now as the anesthetic becomes more widely used, and often by quite unskilled and inexperienced persons, but that should not blind us to the real merits of the drug when used with reasonable precautions.

Improvement on the Levis Carbolic Injection for Hydrocele.

Bodine (*Int. Jour. of Surg.*) always washes the hydrocele sac free from albumen before injecting it with carbolic acid, and finally washes out the injected carbolic acid before closing the puncture. This is to obviate the incompatibility between albumen and carbolic acid and to prevent phenol intoxication. The trocar used is sufficiently long to accommodate 2 cannulae and traverse the sac through cocainized areas—one at the lowest and the other at the highest levels of the sac. When the trocar is withdrawn a cannula remains in each opening. Sterile salt is caused to enter through the lower tube and escape at the upper until the issuing fluid no longer shows albumen by the heat test. The sac is then emptied of salt solution and 1 or 2 drs. of Calvert's liquefied crystal carbolic acid is introduced by a hypodermic syringe through the lower cannula, and the sac manipulated to insure thorough application. Salt solution is again run through the sac until the escaping fluid no longer produces coagulation when added to the original hydrocele fluid. Finally the sac is completely emptied and the punctures sealed with collodion.

Bruises, sprains and abrasions consequent upon tennis, golf, mountain climbing and other out-door sports are prevalent at this season. Infected wounds are frequent and disabling. Country life also brings the results of contact with poison-ivy, poison-oak and the various venomous insects with their characteristic weapons of offense. In all these cases the physician's first thought should be Antiphlogistine. It reduces inflammation of all sorts better and more quickly than any other application, while for poisoned wounds and dermatitis venenata it is almost a specific.

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THE DRUG HABIT.

Dr. Shoemaker of Philadelphia, who we all regard as authority on the use of drugs and their perverted or mis-use, recently delivered a lecture before the Hartford Medical Society, on this subject. He spoke clearly and strongly against the inconsiderate use of drugs, both on the part of the profession and the laity. We quote several paragraphs of this interesting article with the hope that it may stimulate us to be more contemplative and more cautious when using drugs ourselves, and deprive, if possible, the confidence the people usually have in their own ability to prescribe for themselves.

He says: "I believe that we, as physicians, should rely more on natural agencies and less on medicinal substances than, perhaps, we have been in the habit of doing, in order that we should not ourselves encourage an abuse of drugs, and that we should be able to set a consistent example to the public."

It is common knowledge that we all have, that there is a tendency, and a very great tendency on the part of the general public to get into the habit of taking drugs. Such a habit is always injurious; really it is safe to say that often such a habit is ruinous. The per cent of people who like to prescribe for themselves, and assume the responsibility of taking medicine without the advice of the physician is a great deal larger than one who has never given the matter any thought would suppose. Physicians too often themselves get into the habit, without consulting with prominent authors of prescribing favorite medicines, or prescriptions, and do not consider with the care they should the relative curative value of all the drugs or means at their disposal. It is a good evidence of a disciplined therapist to see him have few favorite prescriptions and actually give in each case and for each disease just exactly what is, according to the best authorities, the most appropriate remedy. As I have intimated, we have too many physicians who do not follow this rule and it is natural that the untrained mind would be more apt to fall into the habit of recommending a certain remedy for all sorts and conditions of diseases, regardless of their physiological or therapeutic relation. Possibly the most dangerous of any of the drug habits outside of morphine, cocaine, and whiskey, is the

use of purgative medicines. Very few people think that they do not have intelligence and experience sufficient to manage and successfully treat a condition where these medicines are supposed to be applicable. Of course they have no idea of the pathology, or the conditions that bring about and keep up this abnormal state, and which is the cause of so many aches and so many pains. The unintelligent use of all kinds of purgatives, cathartics and laxatives lead oftentimes to the establishment of just the condition that they were originally intended to cure.

We should educate this class of sufferers and impress upon them as firmly as possible the danger of the habitual use of these drugs, and learn them, to rely on more natural and simpler means for relief. Nine times out of ten this condition, that is the cause indirectly of so many nervous symptoms, could be cured by very simple means, methods that would not hurt anyone. It is extremely uncommon, as every physician has observed, to see constipation among great water drinkers, fat eaters and people with regular habits, accustomed to out-door exercise, etc. It is seldom, too, that you see a fat person who suffers with constipation, or an individual who is thin and constipated who drinks a great deal of water. It is still more uncommon to see an ambitious, hopeful, sanguine patient with a pleasant expression about his face, who drinks but little water. Among this class of people with these habits you see irritable temperaments, contracted brows, emaciated, nervous individuals, who are on the verge of melancholia.

Dr. Shoemaker pointed out the abuse, in this most excellent address of his, of the use of the class of drugs called bitters. Their popularity is based upon the amount of alcohol they contain. Some of them contain as much as 55% of alcohol, or as strong as our brandy or whiskey. Few of them contain as little as 10%, which is twice as strong, so far as alcohol is concerned, as the most of our beers. Many of them contain 15 to 20% of alcohol, the same strength of our wines. A glance at a table recently published in the Ladies' Home Journal shows that the average per cent. of alcohol in all of the well known bitters is about 35%.

Of course their popularity and the extent of their sale is due to their intoxicating properties. Where prohibition prevails, the sale of these bitters greatly increase. They are always palatable and it does not take an expert to almost recognize the brand of whiskey used in the preparation.

Dr. Shoemaker further says: "The advocate of temperance may become as de-

voted to his bitters as the ordinary drinker to his whiskey. Indeed, the mixtures of which I speak, very often inspire a taste for drink which can only be satisfied in the usual way—across the bar. I have no doubt that in very many instances the alcohol habit has grown out of the constant tipping of so-called bitters.”

THE LATEST GREAT CONQUEST OF SURGERY.

During the last few years the surgery of the upper abdomen has come into special prominence and established itself on a firm basis. Gradually, the internist has come to recognition of the fact that gall-stone disease and inflammation of the gall-bladder, as well as certain diseases of the liver, stomach, duodenum, and the pancreas (chronic pancreatitis from gall-stone disease, e. g.) are surgical affections.

W. J. Mayo, to whom is due a large share of the credit for advancement along this line, in his Oration on Surgery, at the last meeting of the American Medical Association, elucidates in an admirable manner the present status of this field of surgery. He shows that while autopsy work and experimental research paved the way, the great strides, the real advances, in this field are the result of work in the operating room, to observations made on the living subject. He points out that a serious lesion in any one of the above mentioned organs may be found within an area the size of the palm of the hand, and that any one of this group may start a pathologic process which may extend to any one of the others.

Note the disturbance of the stomach in gall-stone disease; the adhesions to surrounding viscera due to gall-stone disease and to gastric and duodenal ulcers; the causative relationship between gastric ulcer and carcinoma, and the same relationship between gall-stone disease and gall-bladder carcinoma.

We know that exact diagnosis of conditions in the upper abdomen is not always possible. While pathologic diagnosis is desirable, and usually attainable, surgical diagnosis is all that is necessary from a practical standpoint. The surgeon must be prepared to cope with whatever he may find after opening the abdomen.

For many years appendicitis lay on the border land between medicine and surgery, just where the upper abdomen lies now. However, the diseases of the upper abdomen are rapidly being assigned to their proper places, and it will not be long before the majority of surgical lesions in this region will be brought to the notice of the surgeon early. It is but a few years since the aver-

age case of appendicitis was mis-managed, with a correspondingly high mortality for the disease as compared with the present mortality.

W. J. Mayo reports that of fourteen cases of acute perforation (of gall-bladder, stomach and duodenum) operated by himself and C. H. Mayo, there was a mortality of fifty per cent., while in 1150 operations for subacute and chronic benign conditions in this region the mortality was less than five per cent. How much better to operate early than to await the supervention of acute conditions like perforation.

Mayo says; "It is in the union of the internist and the surgeon that progress is most rapidly made, and in the readjustment of science the former will be the architect and the latter the master builder." This means "get together." Let the internist and the surgeon work together for the common good. See that the surgeon is consulted early in all possibly surgical cases. Bear ever constantly in mind that nearly every surgical case is curable at some time in its course. The gastric ulcer which was the fore-runner of a cancer was at one time surgically curable, and the case of gall-stones which terminated in fatal complications might have been carried to a happy termination.

THE SPECIALIST AND THE GENERAL PRACTITIONER.

Why is it that so many persons are allowed to suffer or die within hailing distance of succor in the shape of special counsel or treatment? It would seem that when efficient special aid is at hand the family physician would invariably wish to avail himself of such aid when it is needed. Yet, such is not the case. One potent reason for this is that the family physician some times places his own interests above those of his patient. Rightly or wrongly, he often fears that a consultant would not shield him in some error he has made. He argues that "dead men tell no tales," and stills his conscience with the thought that perhaps his blunder was not a fatal one, anyhow. With some physicians the conscience soon becomes rusty from disuse, and in such instances patients come to be considered much in the nature of personal property. They are *his* patients, and if he chooses to let them suffer in order to, as he thinks, protect himself, it is his business solely. Happily, such men are relatively few in number.

Some doctors there be who blind their senses to the value of specialism. They seem to think that the general practitioner is as well qualified to pass judgment on or to treat any given case as anybody else is,

with the possible exceptions of the oculist and the neurologist. This is usually the result of ignorance, born, perhaps, of overweening confidence or of actual want of capacity.

Another class may avoid the specialist because, they say, he does not confine himself to his specialty. The surgeon or the rhinologist or the oculist prescribes medicines in his office. Of course, every competent physician knows that the skilful specialist is a first rate physician, with special knowledge and skill added to his armamentarium. In order to do his patient justice he must sometimes act in the capacity of internist. The surgeon often has to observe or treat a case several weeks before he can place it unequivocally in the "medical" or the "surgical" column.

Now, there really is no insurmountable obstacle to be overcome to bring about a much better state of affairs than exists. The writer has no difficulty in finding a specialist to whom he can refer cases. First and always, one must act in the interest of his patient. There can be no excuse for doing otherwise. If one must, perforce, consult with a specialist who is supposed to be lax in the principles of ethics, which are, of course, only the principles of common honesty and culture, then one must place his wits against the wits of "the other fellow," and keep on guard. Not unfrequently, a specialist who is said to be "unethical" is so only in the imaginations of a few. There are few exceptions to the rule that the specialist will protect the interests of the practitioner who refers a case to him. None of us are infallible, and we owe it to each other, as well as to the public, to expose as little of our weakness as possible. And in this connection it may be remarked that calling special counsel and referring cases to specialists is no confession of weakness.

Once the physician has schooled himself to hold the interests of his patient paramount—and what true physician does not—the rest is easy. Moreover, it is a matter of economy and gain all round. The patient is protected from suffering or is relieved of doubt; the general practitioner gains by establishing a reputation for integrity, broad-mindedness and fearless in seeking counsel when in doubt or when he knows it is needed; and the specialist gains another case.

Work in the interest of your patient and you will subserve your own.

HUMAN AND BOVINE TUBERCULOSIS.

The question of the identicalness of human and bovine tuberculosis seems in a fair way of definite settlement. The Royal

Commission on Tuberculosis, consisting of Sir Michael Foster, M. P. (chairman), Professor G. S. Woodhead, Professor Sidney Martin, Professor R. W. Boyce and Professor McFadyean, has presented an *ad interim* report (Science, Vol. xix (N.S.) June 17, 1904, p. 929).

Thus far the commission has drawn conclusions solely from data resulting from its own experiments. Up to the time of this report it had made use of more than two hundred bovine animals in the experiments. The commission finds that tuberculous material transplanted from the human into the bovine produces acute general tuberculosis with the production of widespread tuberculous lesions in various organs (lungs, liver, spleen, lymphatic glands, etc.) identical in all respects, so far as could be determined, with tuberculosis of bovine origin.

In certain instances where the inoculated disease remained local, inoculations from these local lesions successively into other bovines, or into guinea pigs, from which other bovines were subsequently inoculated had, up to the time of the report, ultimately given rise in the bovine animal to intense general tuberculosis.

These findings seem entirely rational and what we should expect, notwithstanding the fact that so eminent an authority as Robert Koch contends that human and bovine tuberculosis are diseases due to entirely different bacteria.

Some two or three years ago, after Koch had expressed this opinion, a noted surgeon, who resides west of the Mississippi, in an agricultural section, remarked to the writer that in his intra-abdominal work on children he had noticed a large proportion of cases of tuberculosis of the intestinal tract and of the mesenteric glands in the absence of demonstrable tubercular lesion elsewhere in the body. Many, if not most of these cases were in the children of farmers—large milk consumers—and he was inclined to attribute the occurrence of this primary abdominal tuberculosis to the use of tuberculous milk.

We think Koch's position on this question has tended to do much harm, in that it would encourage laxity—in this particular direction—in the sanitary control of milk supplies, but that it has actually been the means of doing a great amount of injury is doubtless, because, despite Koch's high standing on questions of this nature, we are inclined to the opinion that few have accepted his views in this instance.

The Royal Commission will submit a full report after completing the investigation.

PREVENTIVE MEDICINE OR GENERAL PROPHYLAXIS.

Self-protection or self-preservation is a feature in the life of every individual which is allowable and even encouraged by divine as well as civil law. The most important subject for the care and interest of every individual is his health and longevity of life. Whatever threatens to interfere with the uniform continuance of its well-being, or to shorten its continuance, are questions of the greatest moment to every individual responsible for his own condition, or that of any other person under his jurisdiction. Any threatened dissolution of life or maiming, or otherwise personal injury, may be protected with the most radical methods necessary to protect that which is all, to any individual, and all law recognizes such resources as allowable.

With the same force it becomes a nation, state, or community to care for its own vital welfare, the health and longevity, the physical well-being of its inhabitants. The method by which this problem may be accomplished and its results worked out to a more perfect solution is through a broad and thoroughly equipped system of sanitary laws and the use of every measure for the improvement and prolongation of the lives of the individual. All of the diseases and conditions which threaten man's physical well-being, must be strenuously combatted by every individual and the legislative power of every political section should, in duty, and as a wise provision, aid every proper method and make it possible for the furthering of this protection to life.

Dr. Herman M. Biggs of New York, in his oration on State Medicine, at the Atlantic City meeting of The American Medical Association, June, 1904, said: "Sanitary work has been pretty well limited along certain old and well-defined lines, much to the detriment of the public health." Also: "General prophylaxis, or that portion of preventive medicine which should come directly under the supervision of the health authorities, has or should have a broader scope than that indicated, and should include the supervision, not only of those diseases which have generally come within sanitary surveillance, but also all the infectious diseases, which, from their nature, are to a greater or less extent preventable, in addition to all other forms of disease which are the result of unsanitary living, occupation, habitations or surroundings, including those diseases arising from manufacturing, mining or other industries which on account of their nature are peculiarly or especially injurious to health. It should also include, with greatly increased powers and breadth of jurisdiction, the sur-

veillance of the water and food supplies and the sewage disposal."

Every State Board of Health should be given thorough power for all usefulness wherein it may concern, to the improvement in the health or physical prospect of each citizen of that State, and every community should be provided with local boards of health with special health officers. With a broadened recognized list of dangerous and preventable diseases and the causes which may be removed, the health may be raised to a nearly perfect condition and the length of life prolonged more nearly to that of the allotted span or old age. Dr. Biggs in his oration of the gain in human life under modern sanitary regulations says: "For the 7-year ending in 1873, the death rate under five years in New York City was 123 per 1000 of the population of these ages. For the year 1903 the death rate under five years was 56. On the present estimated population at these ages, this reduction equals a saving of more than 28,000 lives annually.

There should be established, as is suggested in this article, local boards of health in every county, a health officer in every township and district or parish as the case may be and that all communicable diseases be reported to the State Board of Health, such information and at such times as the latter may deem desirable.

The recompense or fee for the reporting of all cases of contagious or communicable diseases should be ample, that the work may be readily done by those able to make reports and that they be made promptly upon first full assurance of the existence of such conditions of danger. When the loss by sickness, quarantine and death of citizens, useful to their families, the community and the State be considered in all of its relation the policy of ample reward for duty done by the medical man, the sanitarian, will prove to be money well spent; a saving of treasury, when viewed in the commercial sense alone.

Preventive medicine is in its infancy and will prevail and extend along many lines.

SOME POINTS IN THE TREATMENT OF ACUTE LUNG DISEASE IN CHILDREN.

The conditions specifically considered in this article are those acute diseases of the lungs, except tuberculosis, the first point of importance is that of ventilation. The room in which the child or patient is to be confined during the continuance of the disease should be light and as cheerful as it is possible to make it, whether in a private home or hospital. Fresh air should constantly pass into the room, a window or windows should be open at all times, so that a

current of air passes through the room, if such is possible, so that it does not directly pass over the patient.

Sunlight, when obtainable, should be continuously admitted, in fact the inside of the room should be made as near, being out of doors, as it is possible.

In winter, if hot air is provided from a radiator or register, well and good, and the cold or cool air should come in near the register, that it may be tempered. If by a stove the cool air should come in near the stove. With a little ingenuity this can always be arranged. These arrangements are necessary that the cool air may be tempered before it reaches the patient. The temperature of the room should be kept at about 65 to 70 degrees and sufficient bed covers should be supplied to keep the lower limbs and body warm and comfortable. If a stairway is near the room leading to a lower story, this should be kept constantly open, that the heavy foul air may drop down and out of the apartment.

Quiet is a very essential matter in the sick room. "An immense amount of vitality is wasted in sick children because of irritability, restlessness and loss of sleep. One of the first duties is not to give this or that drug, or to use this or that local application, but to put it in the best condition to withstand the disease." *Progressive Medicine*, March, 1904, p. 263. Lying in the supine position is the one which is most conservative of the vital powers and the most conducive to strength.

In children too young to be reasoned with and kept in bed or in their crib, take a small blanket, pin it around the chest or shoulders, fold it over and bring the lower folded end up over the feet and body and pin it well together; you thus put the bed on the child when you cannot, as it frequently occurs, keep the child in the bed. This is a matter of the utmost importance. The constant changing of the child as it demands from its warm covers in the crib to the mother's or nurses lap, with feet and limbs exposed, at times, often when bathed in perspiration, to be quickly cooled by exposure to the air. This is a cause frequently of greatest impediment to improvement.

Warm baths administered occasionally under cover, but not too frequently to annoy, will be grateful and of much good. Plenty of cool drinking water—not ice water.

Diet should be carefully regulated and controlled. Easily digested and readily assimilated food are the ones to be used only. Meat juices are excellent. Oranges are always appetising and refreshing.

Only those drugs which are positively and clinically indicated should be used.

Book Notices.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene and other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession Throughout the World. Edited by A. O. J. Kelly, A. M., M. D., Philadelphia, U. S. A., with the Collaboration of Wm. Osler, M. D., Baltimore; John H. Musser, M. D., Philadelphia; Jas. Stewart, M. D., Montreal; J. B. Murphy, M. D., Chicago; A. McPhe-dran, M. D., Toronto; Thos. M. Rotch, M. D., Boston; John G. Clark, M. D., Philadelphia; James J. Walsh, M. D., New York; J. W. Ballantyne, M. D., Edinburgh; John Harold, M. D., London; Edmond Landolt, M. D., Paris, and Richard Kretz, M. D., Vienna, with Regular Correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels and Carlsbad. Volume II. Fourteenth Series, 1904. Philadelphia, J. B. Lippincott Company. Pages, 309. Price, Cloth, \$2.00.

Owing to the constant and wide-spread interest taken in the general subject of the spread of disease by insects, the article by Dr. Charles F. Mason on this topic is singularly timely and valuable. Dr. Mason has written from first-hand observation and his station at a Texas post of the army has given him much material for study. His text is well illustrated and this fact adds materially to its interest. In the same division of the work in which Maj. Mason's article is published is another practical article by Dr. Andrew Duncan, a London physician of wide-spread experience. In view of the new conditions of life to which Americans are now more widely subjected in tropical residence, both official and civil, his suggestions as to mode of life to be pursued by those returning from a sojourn in tropical countries to a comparatively cold climate should contain abundant suggestion to the practitioner who is called upon to prescribe for the individual suffering from the effects of a prolonged stay in hot climates.

The section on diseases of warm climates is well written, and includes a monograph on the "sleeping sickness" which has latterly attracted so much attention from investigators. There is also a good illustrated article on *uncinariasis*, by Allen J. Smith.

Under the general head of treatment, Dr. Walter L. Bierling, of Iowa, contributes an able article on the significance and treatment of the gastro-intestinal form of arterio sclerosis. Of a more general character is John Benjamin Nichol's article on the etiology, diagnosis and treatment of arterio-sclerosis, and Dr. James M. French, Ohio, defines the limitations of the utility of digitalis in heart disease.

Frank Billings publishes a short clinical lecture embracing several cases, and George E. Malsbary reports a case of osteomalacia, with illustrations.

Under surgery, Dr. J. Torrance Rugh, of Philadelphia, has an excellently illustrated article on the non-operative treatment of ankylosed joints, the text taken from a clinical lecture delivered at the Jefferson Medical College hospital. The illustrations, which are in half-tone, are numerous and would convey a great deal of information, even without the presence of the text.

Short articles on Broncho-pneumonia in children, by Isaac A. Abt, and on Nasal Obstruction, by Francis J. Quinlan, complete a number which is unusually interesting, even for this uniformly interesting series. The purchaser gets his full money's worth.

The Surgery of the Heart and Lungs. A History and Resume of Surgical Conditions Found Therein, and Experimental and Clinical Research in Man and Lower Animals, with Reference to Pneumotomy Pneumonectomy and Bronchotomy and Cardiomy and Cardiorrhaphy. By Benjamin Merrill Ricketts, Ph. B., M. D., Member Am. Med. Ass'n; Western Surg. and Gyn. Ass'n; Int. Med. Congress, 1887; Int. Ass'n Railway Surgeons; Miss. Valley Med. Ass'n; Cin'ti Acad. of Med; Ohio State Med. Soc; Am. Proctologic Soc; Fellow New York State Med. Ass'n., and Member Societe Internationale de Chirurgie. The Grafton Press, New York, 1904.

The writer of this book, as a surgeon, has been brought in contact with a great many cases of pulmonary trouble, requiring surgical intervention, thus he became greatly interested in the subject. On taking up the study he found that there was no one work on surgery that gave more than a brief space to this subject. In order to obtain a knowledge of the operative surgery of the lungs, or even a complete description of the pulmonary lesions, requiring surgical intervention he was forced to consult many books and journals in many languages. In the preparation of this book and for his own convenience, the writer has collected a large mass of material and com-

piled several biographies bearing on this subject. Many doubtful questions regarding the technique of lung surgery has been verified by his own experiments on dogs. We feel confident that the author is correct in his ideas that a work of this character will be acceptable to students and general practitioners. Part of the book is an historical compilation, being accessible for all papers and reports scattered through the various journals of this and other countries, together with a biography of the subject.

The author claims no originality for this, but for the part which deals with his experiments on dogs and for the results obtained, he claims entire originality. He has made no attempt to write an exhaustive treatise on the surgery and surgical diseases of the lungs, but he has made an effort, and succeeded admirably, in considering all of the diseases of the lung, which may call for surgical intervention. The book is especially intended for practitioners and students, for this reason; the descriptions of each disease with its symptoms, diagnosis have been made as concise as possible. The aim being to make the practitioner recognize the various diseases of the lung, in order that he may seek surgical assistance promptly when necessary.

Each chapter has its own biography, so that those desiring information on any particular subject need not consult a great mass of matter, in which perhaps they have no interest. The book contains 510 pages, thoroughly indexed, nicely printed and substantially bound. The text in many places is extensively illustrated by beautiful drawings and colored plates.

The book is one of the most valuable additions to our library that we have had in some time. All those who are interested along the lines upon which it treats will give it the welcome and recognition that it so much deserves.

The Gazette Pocket Speller and Definer English and Medical. Second Edition. New York: The Gazette Publishing Company, 35 West 42d Street. (50 cents.)

Practical utility appears to have been the governing idea of the compiler of this handy little volume. By a skillful selection of type it has been possible to include an extraordinary large number of words in a book that slips easily into the vest pocket, and in which the use of an exceedingly readable heavy faced type for the words defined makes reference agreeable, despite the smallness of the body type. Pharmacists and drug clerks who have frequent occasion to refer to medical terms will find the Gazette Speller and Definer particularly useful,

The Reference Hand Book of The Medical Sciences, Embracing the Entire Range of Scientific and Practical Medicine and Allied Science. By Various Writers. A New Edition. Completely Revised and Re-written. Edited by Albert M. Buck, M. D., New York City. Volume VIII. Illustrated by Chromolithographs and Four Hundred and Thirty-five Half-Tone and Wood Engravings. New York: William Wood & Company, 1904.

The eighth volume of this magnificent reference hand-book of the medical sciences has been received and it is a delight to the man of science; to the busy practitioner; and to the lover of useful books. This is the last volume of this splendid series and the second edition of this great reference hand-book. This was an immense financial undertaking for Wm. Wood & Co., but it has been a complete success. The number and nature of the articles contributed may be seen from the list of authors and contributors in the back part of the eighth volume. Many of these writers have devoted considerable amount of time and labor to thoroughly revise, and to bring up to date, and in many places completely re-write, these eight volumes. Many of the articles are profusely illustrated with excellent drawings, photo-engravures and colored plates. Each article has been revised and brought up to date and many new subjects have been introduced. Among the contributors to this eighth volume we notice the names of Charles Warrenne Allen, Frank Baker, Frederick Amos Baldwin, W. P. Bolles, Major William Cline Borden, Alfred C. Croften, James K. Crook, Edward Curtis, Edward K. Dunham, George Thomson Elliott, Harald C. Earnest, Cyrus West Field, William Fawcett Hamilton, T. Stuart Hart, George Woodruff Johnston, Daniel Smith Lamb, and many more of the most distinguished scientists and physicians and surgeons of the world. It is a complete library in itself, with the additional advantages that the subjects are in alphabetical order, thus making it an easy reference. Physicians who desire a ready reference library cannot afford to be without it. It is invaluable. The writers who composed these volumes are scientific men and teachers of experience and specialists in the lines in which they write. It is only possible here to direct attention to the work, it will be impossible to mention all of the strong features, or attempt to describe them. We pronounce this series of books, the reference hand-book of the medical sciences, the best work of the kind that has ever appeared in the English language.

Abstracts of the Leading Articles of the Month.

The Treatment of Catarrhal Enteritis in Women.

Gilmore (*American Journal of Obstetrics*). The patient is requested to weigh herself in the beginning of the treatment, so that accurate information may be obtained from time to time. Her diet, even in very marked cases, may be comparatively generous: Clear soups, eggs in all forms, one or two quarts of milk daily, matzoon, buttermilk, etc., rice in small quantities, small amounts of bread twice baked, and water crackers, custards, ice cream, roasted and broiled meats. Vegetables are usually restricted entirely at first, as well as all uncooked fruits, pastry, cake, etc. After a few weeks of experimentation the patient herself will be able to modify, enlarge, or restrict her diet according to her requirements.

The bowels should be regulated with some form of cascara sagrada. If there is a tendency to obstinate constipation, or too free movements, high colonic flushing is indicated. The patient is directed to take a quart or more of warm water, mildly alkaline, or normal saline, for the purpose of emptying her lower bowel. This is followed by a quart of water containing 8 cubic centimeters of the normal fluid extract of hydrastis. When it is difficult for the patient to take a satisfactory high enema, the knee and chest position is a valuable and simple means of accomplishing the desired end.

He has obtained uniformly good results with a pill consisting of powdered ipecac, 1-8 grain beechwood creosote, 2 grains black pepper powder, 2 grains naphthol, 1 grain extract of hydrastis. These pills are so coated that they are not affected by the gastric juices.

One cannot dwell too strongly upon the value of inspecting the feces, and ranking it as equally important with the chemical and microscopical examination of the twenty-four-hour specimen of urine. If this is done he believes many an obscure case which comes to the gynecologist for relief, and which is, in many instances, treated unscientifically and with unconscious cruelty by the man who in his heart says "neurasthenic," will yield gratifying results.

Sciatica.

Fedderson (*British Medical Journal*, January 16, 1904) says that acute cases should be put to bed, and the affected limb wrapped up in wool, with the knee flexed by means of a small cushion. The diet

should be of warm liquids, alcohol and strong tea and coffee being avoided, and a strong diaphoresis being promoted by the use of warm demulcents. The bowels are to be well opened with castor oil. His main medicament for this class of cases is sodium salicylate in large doses for four or five days; if this is ineffectual he uses one of the numerous substitutes, especially aspirin. The drug is continued in smaller doses, for some time after the pain is over. Very intense pain calls for an injection of morphine over its acutest seat.

The subacute form tends to spontaneous cure; the most useful adjuvant drugs are potassium iodide, oil of turpentine, methylene blue, and arsenic; fly-blisters may also be most valuable. For the neuritic form galvanism commenced at the end of the second week is recommended, the cathode being placed over the sacrum on the affected side, and the anode over the most tender spot; a warm bath is also of great use. If the disease becomes chronic the general principles of treatment are to improve the arterial blood-supply to the affected limb and to restore abrogated function by the systematic use of physical methods. He is, not unnaturally, an advocate of the Wiesbaden hot baths; he recommends the simultaneous application of the hot douche to the sacrum, the hip, and the affected nerve. Passive movements should be employed at first, then successively active movements and resistance exercises. The passive movements may at first produce an increase of pain, but this is temporary and to be disregarded. Much good results from stretching the nerve by forcible flexion of the hip, the knee being kept extended. Muscular atrophy indicates the faradic current, which should be just strong enough to cause muscular contraction without painful tetanus. Many other forms of mechanical and electrical treatment which have been much vaunted are of value simply by their "suggestive" use. As an aid to cure and in the prophylaxis of recurrences, he recommends the morning use of a tepid to cold sponge bath—known in Germany as "the English sponge bath."

Care of Pregnant and Parturient Women.

Magee (*Southern California Practitioner*) makes the following suggestions in regard to the care of pregnant women:

He says no one has a right to take a case unless he has the time to give that is required. There are a great many men who will apply forceps to terminate a case simply that they may get away and attend to other business, when the case would terminate itself if given a little time. If the physician is rushed with work let him turn

his case over to some one who has more time and is equally capable, and there are plenty such. Of course, let it be understood that the value of applying forceps when indicated should not be underestimated. There comes a time when the safety of the mother and child, or both, demand it, but as long as both are doing well do not operate simply to save your time.

In regard to preparation, be as careful as if preparing for an abdominal section. The time is past when a man can enter the laying-in room with his street clothes on, and having washed his hands in a precursory sort of way, pour some oil on the fingers and make an examination under the patient's clothes, she perhaps standing. Make as few vaginal examinations as possible. In normal cases one or two at the most are all that are required. To sit for half an hour at a stretch with the hand in the vagina, pretending to help the patient may do a great deal of damage. The less meddling the better. It is better to use gloves, or at least finger-cots, on the examining hand, and one should wear a sterilized suit or gown during the delivery. After delivery careful attention to any tears, and then the delivery of the after-birth allowing at least twenty minutes before resorting to Credé's method, and an hour before manual delivery is attempted for adherent placenta, and then only after another complete cleaning up. A drachm of ergot by mouth is the writer's routine practice after the placenta is delivered. Sterilized pads should be placed on the perineum.

Contraindications to Maternal Feeding.

Northridge (*Brooklyn Medical Journal* for January, 1904) makes the statement that it should always be considered a very serious proposition to wean an infant under eight months of age, especially in the summer-time. Its life may pay the forfeit.

The mother also must pay the price if she breaks nature's law in this regard. She is much more prone to uterine diseases, diseases of the breast, cancer, frequent child-bearing, and besides loses the pleasure of nursing her own child.

Normal maternal lactation being nature's method, we should be very sure that this has become abnormal beyond any known remedy before we advise or consent to the cessation of maternal feeding.

Because a baby does not thrive upon the breast is not in itself a sufficient reason for weaning. Perhaps it is fed too seldom, or for too short a time, or too frequently, or for too long a period, or the cause may be inherent in the mother or in the milk, and may be removable. The trouble should be searched for, and if possible overcome.

Sometimes the cause being eradicated, nursing and nutrition go on again normally.

Because a mother is nervous or frail, or given to fits of anger, or unhappy, or does not wish to nurse her baby—these are not necessarily good reasons for weaning. They should be made light of, from the standpoint of the physician. Let the mother take the full responsibility of weaning if she insists, unless weaning after careful effort to nurse is deemed advisable.

Some women, not knowing what joy they are missing, simply refuse to nurse their babies, often from some selfish motive, and "when a woman won't, she won't." These unfortunate babies must be wet-nursed or brought up artificially, and some of them die.

The following are some of the reasons given for weaning, which in the great majority of cases do not constitute real contraindications:

- Cracked nipple.
- Hyperesthesia of the nipple.
- Ulcer of the nipple.
- Caked breast.
- Mother unwilling to nurse her child.
- Irregular habits on the part of the mother.
- Mother ill-tempered.
- Mother given to fits of depression.
- The physician should be able to overcome these by treatment and persuasion. If he cannot overcome the cause it becomes a real contraindication.
- The following are some of the conditions which may in certain cases constitute good and sufficient causes for weaning; the doctor must judge in each case according to the facts, and his decision should be final as to whether the nursing shall go on or not:
- Abscess of the breast.
- Insufficient supply of milk.
- Child losing weight or not gaining.
- Indigestion in child.
- Frequent emissions.
- Syphilis in the mother; child apparently free.
- Diseases of the nervous system.
- Chronic diseases of the skin.
- Menstruation.
- Pregnancy.

In many cases menstruation does not interfere in the least with the nursing, in effect, either upon the mother or the child. It sometimes causes the mother to feel "dragged out" somewhat. Sometimes the milk will disagree with the child temporarily. In such a case it is wise to give the baby an artificial food during the menstrual week and keep the breasts pumped out occasionally each day. If either mother or child appears to be gravely disturbed, of course the nursing should cease at once.

Congenital Dislocation of the Hip.

F. F. Burghard in *The British Medical Journal*, gives a review of the subject up to date. He has tried Lorenz's bloodless method in 30 cases; in only one of them was a perfect cure obtained, and this case was a child under 3 years of age. In the remaining 29 some were submitted later to an operation, but all of those who for any reason were not, were very much improved that they would, in the absence of radiography, have easily passed for cured. He has not followed closely either the Hoffa or the Lorenz cutting operation, but has made modifications. All together he has operated upon 13 cases. In nine the cure has been perfect, and the children are now walking about quite well; in three the head of the bone has escaped and formed a new acetabulum above and behind the old, but the joints are quite stable. In no case has there been a complete failure. His conclusions are:

- (1) That all cases should be checked by radiography, and that no "cure" should be spoken of that is not a true anatomic cure.
- (2) That all cases of congenital dislocation in patients under 14 years should be submitted to treatment. In the great majority improvement will result, while in some a true anatomic cure is brought about.
- (3) That in all these cases Lorenz manipulations should be tried in the first instance. Even should they fail to effect reduction, they facilitate any subsequent procedures.
- (4) That the prospect of a cure by Lorenz's "bloodless method" is in direct proportion to the youth of the child, and that after the age of 4 years there is little hope of a true cure by its means.
- (5) That in any case the chances of a true cure by the "bloodless method" are not very great.
- (6) That an open operation should be done whenever a radiograph shows that the "bloodless method" has failed to reduce the dislocation, except, perhaps, in the case of a very young child—under 3 years—in whom the manipulations may be repeated.
- (7) That with the open operation no fear need be entertained of shock, bleeding or sepsis.
- (8) That under no circumstances should the joint surfaces be remodelled.
- (9) That an open operation is more calculated to result in a cure, as it enables the surgeon to ascertain beyond a doubt when the head of the bone is really in the acetabulum.
- (10) That the open operation is especially suited for cases over 4 years of age, and for those of bilateral dislocation.
- (11) That after the operation the limb should be put up in a position of maximum

stability; in the majority of cases this will be similar to Lorenz's position. The limb should be put up in plaster-of-paris immediately, and the casing should take in the flexed knee; this is essential in order to secure stability of the head of the bone.

(12) That all tense structures should be stretched or tenotomized as a preliminary measure a week or so previous to the open operation. The after treatment is practically identical with that of the Lorenz method.

Urinary Casts.

Emery in the Brooklyn Medical Journal, says that hyaline casts may be dependent on weakened and disturbed circulation, or due to altered conditions of the blood and febrile conditions. If they are small or medium-sized, and occur in a man over forty-five years of age, they need not be considered of special importance. If they are large or medium-sized, and appear in large numbers, farther examination and careful inquiry are indicated. Hyaline casts containing granular matter do not always indicate destructive processes in the kidney, nor do small hyaline casts in young persons after exhaustion or in continued exercise. In people of middle age, large hyaline casts, if long continued, may indicate the beginning of interstitial nephritis. If a trace of albumin continues to exist, suspicion should be excited to the point of certainty, especially if the urea is decreased. The occurrence of epithelium, blood or granular casts in the urine is of special gravity and should call for systematically conducted chemical and microscopic examination. Such may occur, however, from localized infarcts, which may heal up. In tonsillitis, pneumonia, and typhoid fever albumin and casts may appear and no detrimental effects follow. Bacteriological casts are occasionally seen and are of importance. Waxy casts are usually of grave import.

Taste Fibres and Their Independence of the Trigeminal Nerve.

Harry Cushing, in the *Johns Hopkins Hospital Bulletin*, discusses this subject. As a result of thirteen cases of extirpation of the Gasserian ganglion, he draws the following conclusions:

1. That the perception of taste is unaffected on the posterior portion of the tongue, and never permanently nor completely lost on its anterior two-thirds, after removal of the Gasserian ganglion.

2. That a temporary abolition or lessening of the acuity of taste may be found to exist over the anterior and anæsthetic portion of the tongue for some days after the operation.

3. That this temporary loss of function may possibly be occasioned by some inter-

ference with chorda transmission brought about by a mechanical or toxic disturbance due to degeneration of the lingual nerve.

4. That a lesion of the trigeminal nerve may be associated with disturbance of taste over the chorda tympani territory without the necessary inference that the nerve is a path for gustatory impulses.

5. That the trigeminal nerve in all probability does not convey taste fibres to the brain either from the anterior or posterior portion of the tongue.

Chorea—What Is It?

J. Aldrich (*Archives of Pediatrics*) divides chorea into two classes: (1) Chorea of Sydenham. (2) Secondary or symptomatic chorea, including (a) chronic progressive, or Huntington's chorea; (b) pre-hemiplegic disorders of the movement; (c) post-hemiplegic disorders of movement; (d) congenital chorea, more properly congenital athetosis; (e) chronic chorea. A satisfactory presentation of the pathogenesis of chorea in the present state of our knowledge is impossible. It is evident that we have to deal with an abnormally susceptible nervous system and the action of some toxin or toxins which are the result of bacterial infection. The belief is growing that the disease is due to irritation of the motor mechanism, most probably the cells of the cerebral cortex, by some irritant of infectious origin. That individual predisposition usually exists is certain, and that the rheumatic diathesis, particularly when associated with degenerative types and precocious development of the mental and psychical functions must be considered important causative agents, is positive. Indeed, it must be regarded as a disease of neurotic stock, a stock too finely organized to undertake safely the competition, the overwork, anxiety, and successes, as well as the failures of school life; unable to withstand successfully the changes of adolescence as well as early pregnancies—in fact, anything which produces a lowering of the normal physiologic resistance.

Frame for Fractures.

Cunningham, (*Boston Medical and Surgical Journal*) gives a description of a new frame for use in fractures of the lower extremity. Its construction is of common pipe tubing. The apparatus consists of a frame 40 by 14 inches, with two detachable eyes 13 inches high, screwed into one end. This frame serves for a strip of canvas 3 inches wide and 30 inches long, and has a permanent fastening at one end, while the other is held by a sliding device which is regulated by a thumb screw and crank permitting the canvas to be drawn sufficiently tight to prevent sagging. An upright at

the lower end of the frame consists of two perpendicular brass rods 11 inches long; their lower ends pass through the frame, and their length can easily be adjusted by thumb screws. Their upper ends are inserted into a piece of oak sufficiently large to permit having a slit in its middle 8 inches by 1 inch, into which there are fitted two wooden braces. These are parallel with the frame, and each is perforated at corresponding points by one-quarter inch tubes; the braces slide sideways, and may be fixed at desired points by thumb screws. The fractured limb is placed in the canvas, which is drawn tight, and covered with several layers of sheet wadding long enough to fold over the sole of the foot. The normal curve at the ankle and popliteal space is properly padded. The upright is then raised so that a round piece of wood placed in corresponding holes in the braces will be at the upper part of the ball of the foot. This brings the foot at right angles with the leg. The braces are now brought in contact with the foot, one on either side, and the foot turned, correcting any inversion or eversion which may be present, and giving proper alignment of the great toe, inner side of the patella and anterior-superior spiral of the ileum.

The leg being fixed mechanically, the layer of sheet wadding is turned over the leg and foot, and held in place by enough sheet wadding rollers to supply the proper amount of padding. Plaster of paris bandages are then applied, these including the canvas strip as well as the leg.

After the cast is completed, the leg is strapped to the frame by trickle straps and its upright and legs are removed. The frame acts as a support to the plaster and is left in position until the latter is hard.

By cutting the canvas in its point of attachment to the frame, it is removed and the canvas strap drawn out of the cast.

The apparatus is not only useful in the more common fractures, but is especially serviceable in those which are compound, requiring operation. In the treating of fractured femurs by extension, special attention is paid to applying considerable padding over the dorsum of the foot and above the condyles, and to applying the plaster so as to cause the extension to be made from these two points.

A feature of the frame is that but one person is required to apply a plaster accurately in the majority of cases.

Gonorrhea, Its Complications and Our Responsibilities in Authorizing Marriage.

Joseph T. Johnson in the *American Journal of Obstetrics* says from the best statistics obtainable from the proper sources

in thirty large cities of the U. S. there are 300,000 women leading lives of prostitution. For every one of these there is one of whom the police do not know, making about one-half million in this country subject to this disease. Taking into consideration the world, the number must be reckoned in the millions, 40,000 of these women die annually. It is fair to presume that 30% to 40% die from the effects of gonorrhea. There is hardly a disease to-day which is capable of producing more suffering and sorrow and few which can produce inflammation at so many parts of the body. Dudley is quoted as saying: "The chief power of the gonococcus for harm lies in the lasting vitality of the germ after apparent cure." 15,000 innocent children out of 28,000 blind in the United States were found to have lost their sight from gonorrheal infection.

There is no more important question in preventive medicine than this: "When can we professionally sanction the marriage of a man known to have had gonorrhea?" Can we say when a man is cured?

He says: "It is impossible to determine at what moment, the gonococcus having disappeared, the disease ceases to be transmissible."

"There are more and better reasons for locking up in jail a man with gonorrhea than there is to incarcerate a common murderer."

"Gonorrhea is the most frequent cause for suppuration in women."

"So far as I know, we have no means of positively telling the men and women who have gonorrhea that they are well."

One case is mentioned in which a patient put off his marriage for two years, and after an examination with culture and cover slips was told to marry. Six weeks afterward his wife had acute tubal disease which resulted in salpingectomy.

"We may have virulent gonorrheal process and yet be unable to demonstrate the presence of the germ in the secretions of the urethra or vagina. He sums up the points of his paper as follows:

1. Opportunities for acquiring gonorrhea are very numerous.
2. By recent investigations J. believes that fully 90% of men do acquire it.
3. Serious pelvic complications are consequently possible to all women.
4. Requirement of abdominal sections upon women, leaving them seriously mutilated if not unsexed.
5. Dangers of puerperal infections.
6. Ophthalmia neonatorum.
7. The complications of infection in men.
8. Great difficulty of cure after reaching

the chronic or latent stage in the posterior urethra.

9. The great responsibility in advising patients concerning marriage.

Gastro-enterostomy.

A. W. Mayo-Robson in the *Lancet* describes this operation as follows: The abdomen is opened by a four-inch incision one inch to the right of the median line, above the umbilicus. The stomach is thus exposed. The jejunum is readily found by turning the omentum and transverse colon upward and feeling for its commencement to the left side of the second lumbar vertebra. A point about 13 inches from the commencement is chosen for the anastomosis in the anterior operation, and 6 to 9 inches in the posterior operation. The loop is drawn out, emptied by gently "milking," and clamped with special forceps having long, rubber-covered blades, taking care to have the proximal end of the loop toward the cardiac end of the stomach. The union of the viscera may be made outside the abdomen, a long piece of gauze being packed about the operation area. In the anterior operation the point selected on the stomach for the union is near the pylorus, and as close as possible to the greater curvature. After the suture of the two arches is completed, a few additional stitches are introduced in the proximal end of the loop, securing it at a higher level to the stomach wall and also in the distal end, securing it at a lower level, in order to avoid kinking. In the posterior operation the great omentum and transverse colon are pulled upward exposing the under surface of the transverse mesocolon. A small slit is made in this, and enlarged with the fingers, taking care not to wound any vessel. This, in case of adhesions on the posterior wall of the stomach is sometimes simplified by passing the finger into the lesser peritoneal cavity through a thin place in the great omentum, just below the stomach. The finger thus introduced is used to press forward the transverse mesocolon, where it is free from adhesions. The posterior wall of the stomach is thus exposed, and the portion which is to be sutured is drawn through a slit in the transverse mesocolon and clamped by the long, slightly curved blades of a special pair of forceps, covered with rubber in order to avoid crushing the wall. The lateral margins of the incision in the transverse mesocolon may be stitched on each side of the stomach by a single suture in order to prevent closure, and a slit and consequent narrowing of the jejunum, as has been reported by Czerny. Union of the viscera may be effected in both anterior and posterior operations in one of three ways. Simple suture; by the decalcified bone

button of the author; and by the Murphy button. The suture employed in the first two methods is practically the same. The bobbin is a splint upon which the stitches are applied. By its use an immediately patent opening of known size is secured. The bobbin is digested in 48 hours after it has accomplished its purpose. The Murphy button is generally used only when the greatest haste is desired, as the stitching in either of the first two methods may be done in from four to eight minutes by practised hands. The button is rarely, if ever, necessary. Mikulicz regularly employs it and speaks well of it, and many other surgeons prefer its use to all other methods. The method of stitching is the following: The stomach and intestines having been placed in apposition, a continuous Lembert stitch of plain celluloid thread unites the serous surfaces for a line of two inches or more. The line of this stitch is semi-oval, and joins the surface of the viscera close to the posterior portion of the anastomotic opening. Incisions are then made into both viscera in front of this suture line. A second continuous suture is now passed, uniting the posterior cut edges. This may take only the mucous membrane or all the cuts, and is of catgut. After completing the posterior half, the bobbin is introduced and the anterior semicircles of stitches are now continued. First the catgut circle is made into the cut edges, and then the celluloid circle through the cuts in precisely the same manner as the posterior line of sutures. If the bobbin is being used, the sutures are drawn firmly upon it and tied. If not, the stitches must be interrupted at one point or more in order to prevent the sutures drawing and puckering the orifices.

Pneumothorax in Children.

David Bovaridi (in the *Archives of Pediatrics*) reports two cases of this disease produced by the rupture of areas of bronchopneumonic consolidation occurring as complications of measles; two cases produced by the rupture of small abscesses of the lung, the clinical history of which is not known, and a fifth case, which was probably due to the rupture of an emphysematous vesicle. From the limited number of cases reported in literature, it would appear that pneumothorax in children is most liable to occur in the diseases which are characterized by their tendency to bronchitis, bronchiectasis and bronchopneumonia; namely, measles, diphtheria, and whooping cough. It occurs also in association with tuberculosis of the lungs, but apparently not with the frequency noted in adult life. As only four of the eighteen cases collected recovered, pneumothorax in childhood must be considered a very grave complication.

Experience is too limited to attempt to formulate any rules for the treatment of the affection but the extensive displacement noted in one of the writer's cases, and the evidences found of resulting interference with the function of the heart, suggest the advisability of withdrawing the air from the pleura, or, in the event of the failure of this procedure, making a free incision into the pleura.

Deceptive Signs of Improvement Following Septic Intoxication in Appendicitis.

W. H. Bennett, in the London *Medical Lancet*, says that the subsidence of pain, tenderness, swelling, and rigidity in the right iliac fossa is no evidence that an appendicitis case in a young person is passing out of the danger zone. This fact holds even though, with the foregoing apparent improvement, the pulse may fall and the temperature improve. Under these conditions of apparent safety, a gangrenous condition may be present in the appendix. Two illustrative cases are narrated presenting the above-named course of symptoms. In the first, operation disclosed gangrene; in the second, operation was deferred. He says that decision as to operation in such cases depends on two points: (1) The condition of the temperature, and (2) the aspect and mental mood of the patient. On the latter he lays special stress. A flushed and dusky cheek, black lines under the eyes, furred tongue, dulness, inertness, etc., all suggest danger, while a cleaning tongue, brightening mental state, etc., are signs of improvement. The dulness is due to septic intoxication, and an improvement in the local physical signs must not mislead us. Decrease of pain in a septic patient does not mislead us. Decrease of pain in a septic patient does not necessarily mean improvement, unless it is accompanied by a constitutional betterment. As to temperature, a fall may be a danger signal rather than a sign of improvement. In any part, therefore, where the lymphoid tissue is very abundant, as it is about the appendix, the end of which is extraordinarily well provided with adenoid tissue, we may be sure that in young and growing subjects any destructive process will often be extraordinarily acute, a fact which partly explains the peculiarity of these cases in the young. The initial changes coming on acutely in the first stage are followed so rapidly by necrosis and decomposition that the commencement of septic intoxication begins almost, as it were, before the constitution of the patient realizes the onset of the condition—in fact, at a point before the actual acute symptoms develop in an adult, the patient, if a young subject, is becoming

dull and listless from the effects of the rapid absorption of septic material by the superabundant lymphoid tissue. The peculiarity of the symptoms, then, in young growing subjects, depends, first, upon the tendency to great activity in these destructive processes, and, second, to the rapid absorption of septic matter in a region supplied only too lavishly (for conditions of disease) with ready means of taking up septic material.

Mind-Blindness for Objects.

According to the *Edinburgh Medical Journal*, Lepine records a case which is interesting as being in a sense the converse of word blindness. It was that of a man who had had partial and transitory attacks of paralysis for some months. When Lepine saw him, there was no aphasia or amnesia, speech was perfect, and vision was also apparently quite good. It was not, however, quite normal, for, though he had no hemianopsia, he had some difficulty in "fixing" any object, and he could not read fluently at all. Objects which, in the course of his business (as a traveler for watches, etc.), had been very familiar to him, he recognized promptly and named correctly, but any other article, even if quite a common thing, he failed to name or even to recognize; he could not imagine, for example, to what use a measuring tape could be put when it was shown to him. He could write to dictation and copy perfectly, but if asked to draw a common object, such as a tree, he merely wrote down the word "tree," without being able to make the slightest effort to sketch it: he seemed to have completely lost the visual memory of it. The picture of an object he appeared to recognize more readily than the actual object. When he looked at an actual he recognized its outline, form, relief, color, etc., but remained entirely ignorant of its nature or use.

Sialogogues: Their Therapeutic Employment.

W. G. Aitchison Robertson, in the *Scottish Medical and Surgical Journal*, says that in conditions of amyloseous dyspepsia great benefit can be obtained by the slow mastication of starchy food. In more aggravated cases the patient should be told to chew slowly some one of the vegetable agents which exert a distinct sialocinetic influence. In cases of hyperchlorhydria, our aim ought to be to secure the digestion of the amyloseous constituent of the meal before the free acidity has had time to check proteolysis. This we can do by increasing the flow of normal saliva. In many cases of feeble gastric digestion the fault is due to merely a diminished activity in the gastric juice, both hydrochloric acid and pepsin

being present in less than their normal amounts. When saliva is introduced into such a stomach, it has the effect of stimulating a more copious and also a stronger secretion, and so the more saliva introduced, the larger is the amount of gastric fluid which is secreted. In many such cases as he has described, the author has found that a stimulation of the salivary secretion by means of palatable and pleasant vegetable sialogogues, as, for example, ginger, gentian, peppercorns, cusparia, etc., has been of the greatest benefit to the patient. Such bitter agents as cusparia, calumba, gentian, chamomile, etc., exert also a very beneficial effect on the gastric mucous membrane. Other salivary stimulants are at the same time carminatives, as pimenta, ginger, pepper, etc. We can thus obtain both actions from the same drug and employ them therapeutically.

X-ray and Light in the Treatment of Tuberculosis.

Russell H. Boggs (*Journal of Advanced Therapeutics*) states that from the results obtained in the treatment of this disease by the rays, no doubt should remain in the mind of anyone that these agents exert a decided, not to say specific, influence. Many cases have been successfully treated by the X ray alone, but in a majority of cases the treatment is made more effective by using X ray one day and local light the next.

A physician who treats with the X ray and light just because he knows certain cases have been cured, and is not familiar with his therapeutic agents, as well as the pathological conditions which exist, is likely to do more harm than good, and bring discredit upon both himself and the treatment. There is a marked difference in the treatment when properly given, and X ray work should not be done by the inexperienced any more than surgery. It is a well-known fact that it is the rays that are absorbed by the tissues that produce the beneficial results. How to best accomplish the absorption of the chemical ray has been given considerable time and study by every operator.

It has been said by some that a weak light longer continued has more therapeutic properties, but this is certainly a mistake, if the therapeutic action of the X ray is due to the rays that are absorbed. In treating pulmonary tuberculosis he uses a medium low tube, excited by sufficient current to penetrate the chest.

With the light produced, a normal radiograph of the chest can be made in from one to two minutes, while with a static machine and high tube it would require at least ten

minutes' exposure to make a satisfactory radiograph.

Of course, chest pictures should be taken in a few seconds. In making radiographs with a static machine, it is a difficult task to decide when the plate is properly exposed. Does not the same hold good in radiotherapeutic work? The author does not mean to say good work cannot be done by a static machine, but only that it is much more difficult.

In order to do all kinds of X ray work it is necessary for the operator to keep a stock of tubes on hand, at least from eight to twelve.

The terms "low," "medium," and "high," as applied to tubes, are very misleading.

The measure of the spark that a tube will force back is a less reliable method of determining the vacuum than the fluoroscope. However, the continued use of the fluoroscope is dangerous to the operator. He has been experimenting with spark-gaps for more than two years, and have always attempted to secure a tube for radiographic work which was of low vacuum and would give sufficient penetration when the proper spark-gap was inserted.

In treating tuberculosis, special attention must be paid to the appetite, digestion, assimilation, oxygenation, metabolism, and excretion, the very foundations of successful resistance, and repair through the medium of the blood may be gravely interfered with by the use of morphine or other medications to relieve the cough or insomnia.

In the treatment of tuberculosis of the bone it is always advisable to immobilize the part, and for this purpose a felt splint, through which rays will readily pass, is serviceable. It has been my method in most cases to treat with the X rays every other day, giving an exposure of ten minutes. In pulmonary cases the rays are applied five minutes anteriorly and five minutes' posteriorly and in tuberculosis of the joints five minutes' exposure is given to each side of the limb. However, different joint cases vary greatly in susceptibility to the rays, which is no doubt due to the nutrition being more affected than we can determine in certain cases. It is a well-known fact that when raying normal and abnormal tissues, the normal tissue will scarcely be affected unless the dosage is large, while the abnormal of low vitality will be burned considerably.

In many cases where the patient is not doing well he is given an electric-light bath twice a week, which has always been followed by improvement.

The Cure of the More Difficult as Well as the Simpler Inguinal Ruptures.

W. S. Halsted, in *John Hopkins Bulletin*, describes his operation as follows:

The aponeurosis of the external oblique muscles is divided and the two flaps reflected as in the Bassini-Halsted operation.

The cremaster muscle and fascia is split, not directly over the center of the cord, but a little above it.

The internal oblique muscle is made as free as possible. A little artefaction is here often necessary. If the muscle cannot be drawn, without tension, well down to Poupart's ligament, it helps to make a relaxation cut or two in the anterior sheath of the rectus muscle under the aponeurosis of the external oblique muscle. This sheath being in part the aponeurosis of the internal oblique muscle, one can readily comprehend that incisions into it, if properly made, might be of service. It is well, however, to postpone making such incisions until the sewing of the internal oblique muscle to Poupart's ligament is begun, for then the amount of tension can be nicely gauged and the number, length and precise position of the relaxation cuts determined. A second reason for postponing the relaxation incisions into the anterior sheath of the rectus muscle is that we sometimes use this portion of the rectus sheath to close the lower part of the inguinal canal, as already stated.

When the veins are large, and this is usually the case, they should be excised with very great care to avoid even the slightest extravasation of blood into the tissues about the smaller veins and about the vas deferens which they accompany. And the vas deferens, as first emphasized by Bloodgood, should not be raised from its bed or handled or even touched, lest thrombosis of its veins occur. The veins should be ligated as high up in the abdomen as possible, being pulled down quite firmly just before the ligature (in a needle with the blunt end first) is passed between them. As a precaution against slipping, apply two ligatures of fine silk both for the abdominal stump and for the testicle stump of the veins. The farther from the testicle the veins are divided, the better, provided, of course, that their stump is external to the external abdominal ring.

Ligation of the sac by transfixion or by purse string suture at the highest possible point. Both ends of this suture, after tying, are threaded on long curved needles, then carried far out under the internal oblique muscle from behind forwards, and, passing through this muscle, about 5 mm. apart, are tied. The idea was suggested to the author by Kocher's operation, the principle being essentially the same.

The lower flap of the cremaster muscle and its fascia is drawn up under the mobilized internal oblique muscle and held in this position by very fine silk stitches, which, having engaged firmly a few bundles of the cremaster, perforate the internal oblique, preferably where it is becoming aponeurotic, and are tied on the external surface of the latter.

The internal oblique muscle, mobilized, and possibly further released by incising the anterior sheath of the rectus muscle, is stitched (the conjoined tendon also) to Poupart's ligament in the Bassini-Halsted manner. Catgut is usually employed for this suture.

The aponeurosis of the external oblique muscle is overlapped. This is known as Andrew's method, although devised independently.

The skin is closed with a buried continuous silver suture, and the incision covered with five or six layers of silver foil. It is unnecessary to dress or examine a wound closed in this manner for two weeks, when the wire may be withdrawn. Patients are kept in bed from eighteen to twenty-one days.

Erythema as Indicators of Disease.

Galloway, in the *British Journal of Dermatology*, calls attention to certain erythematous eruptions in association with general diseases.

Of the simple erythematata the most characteristic example is the ordinary flushing, frequently of emotional origin and usually transient in character, due to the action of the higher nerve centers in inhibiting the vasomotor supply of the cutaneous arterioles and the flooding of the capillaries unguarded by muscular fibers. In those suffering from feeble circulation this temporary inhibition is very annoying and often results in cold, clammy, and congested extremities. With these vascular disturbances is frequently observed a certain degree of tachycardia, naturally to be expected if there is a considerable amount of diminution in the peripheral vascular tension.

In the course of time these repeated functional disturbances cause a serious tendency for the skin itself to become edematous and to suffer severely from chilblain, a paralytic distention produced by local injury of the nerve muscular mechanism of the arterioles by cold.

Eruptions occurring in the various types of malarial fever are frequently observed, and of these the irregular forms of erythema are the most common. Improper food, or its imperfect digestion or elaboration in the tissues, produces toxins which give rise to exudative lesions of the type of erythema

multiforme. These types of eruption are also seen in association with visceral lesions. A well marked circinate erythema will often appear in cases of Bright's disease, tending to pass on to exfoliative dermatitis.

Traumatism as a Factor in the Etiology of Pulmonary Tuberculosis.

Wei, in the *British Medical Journal*, believes that the idea that tuberculosis of the lungs is associated with traumatism to the chest-wall is one worthy of considerable attention on the part of the practitioner, for we do not often see the results of traumatism in tubercular disease of bones and joints.

The question of traumatism receives first thought when dealing with tubercular lesions elsewhere, but when it comes to a lesion in the lung, that etiological factor is lost sight of. That they are related cannot be denied, for it is admitted by many observers. The lung may suffer in the contusion as certainly as the chest-wall and pleura, and with a pleurisy as a primary lesion a serous inflammation may be set up in the lung and afford a suitable nidus for the tubercle bacillus. This bacillus requires more or less stagnant air for its growth, which is slow, the apices being the favorite site. There is limitation of motion and, consequently, lung inactivity. With a traumatism to the pleura there is resulting thickening and adhesions, which render section of the lung inactive and the air more or less stagnant, giving you really a veritable apex. Is it, then, unfair to assume that these various constricted, or "interfered with," patches of the lung may become the seat of a tubercular lesion?

Curette and Curettage In Gynaecological and Obstetrical Practice.

Briggs (*Liverpool Medico-Chirurgical Journal*) says that the main object of his paper is to disseminate doubts as to whether the modern interpretation placed upon the use of the curette in gynaecology and obstetrics is consistent with past experience and present knowledge. The position of the curette is experimental. Though adapted to the accomplishment of a free removal of endometrium, it is largely inefficient as a means of cure or relief. Cases are quoted to illustrate needless curettage from wrong interpretation of local symptoms, and the failure of curettage as a means of diagnosis and treatment in uterine hemorrhage. Treatment by the curette of what is commonly understood as endometritis is apt to be incompletely effective, especially in the chronic cases in which a copious purulent discharge issues from the interior of the uterus. Menorrhagia and metrorrhagia, especially the former, are gauged with un-

certainly as to their control by the local treatment and as to their causation. It is possible that 75 per cent. of the endometrium in a supposed case of endometritis may be curetted away without the slightest alteration of the menorrhagia or metrorrhagia. The relation of the endometrium to the bleeding from the fibroid uterus as cause and effect is not proved. Curettage, where practicable with efficiency, may be ineffective in its influence on the hæmorrhage.

In obstetrical practice the finger is to be preferred; the less the curette is used the better.

Cirrrosis of the Stomach and Colon.

J. B. Cleland, in the *British Medical Journal*, describes a case of this extremely rare condition. The patient, a man aged thirty-nine, had had an attack of indigestion, lasting a week, six months before admission; otherwise no previous illness. When taken into hospital he had been suffering from diarrhea and vomiting for about two months; for the last ten days he had noticed a tender and somewhat painful lump in the right side of the abdomen. No blood had been passed by the rectum, but the patient had lost nearly 28 pounds in weight during the last six months. On admission he was found to vomit from ten to fifteen minutes after food, and to have a rounded, ill-defined mass to the right of the umbilicus. An exploratory laparotomy was performed. This mass was found to be associated with the colon, was considered to be malignant, and the wound was closed. Death ensued five days later. Post-mortem the principal changes found were in the stomach and colon, in each of which there was a thick cartilaginous-looking layer immediately beneath the mucous membrane. This layer consisted almost exclusively of fibrous tissue, which was massed especially round the vessel. The circular layer of the muscles was cut up by bands of fibrous tissue into lobes and lobules like those of a cirrhotic liver. The masses of fibrous tissue were in places separated by clusters of small young cells surrounding small vessels. The mucous membrane was nowhere ulcerated, though its defective blood-supply had led in places to an increase of small round cells. He considers this case to have been one of fibrosis, started by the presence of a toxin circulating within the blood-vessels.

Dangers of the Trendelenburg Position.

Kraske, in the *Lancet*, says that although the Trendelenburg position is attended by manifold advantages under numerous conditions, it might nevertheless occasionally lead to serious accidents. In-

stances of paresis of the peroneal muscles and emphysema of the abdominal walls have already been recorded. These are only temporary lesions, and their after-effects are of little if any consequence, but the interference with the circulation which attends the production of anesthesia in the Trendelenburg position is of much greater importance. In two cases of myocarditis the administration of ether as an anesthetic led to a fatal issue, which was due to acute dilatation of the heart, the result of increased blood-pressure caused by the Trendelenburg position. In a third case the patient suffered from ileus for four days, but recovered on the fifth day. In a fourth case, in which the symptoms of ileus became very alarming, the abdominal was reopened, the omentum was doubled up and lying above the liver, the effect being to cause obstruction of the transverse colon. The omentum was freed but the patient died. Similar observations had been made by Professor Schauta, of Vienna, who found that after the intestine had undergone displacement in consequence of the employment of the Trendelenburg position it did not spontaneously return to its normal place when the patient lay horizontally; he therefore recommends that the surgeon before closing the abdominal wound should correct any displacement of the intestines there might be. He is of opinion that the hematemesis observed after laparotomy is due to distention of the gastric veins.

Professor Trendelenburg said that he doubted whether the cardiac embarrassment in the case of myocarditis mentioned by Professor Kraske was really caused by the elevation of the patient's pelvis and lower extremities. Such patients are not good subjects for the inhalation of an anesthetic in whatever position they might be. With very corpulent patients he does not employ elevation of the pelvis for more than five or ten minutes at a time.

Melancholia, Insomnia, and General Lowering of Nerve Power.

T. D. Fink, in the *Cin.-Lancet-Clinic*, writes the following: "I am convinced that there is no other remedy so useful and attended with such satisfactory results in the treatment of melancholia with vasomotor disturbances, anemic headache, emotional distress, and active delusions of apprehension and distrust as Antikamnia Tablets. These tablets also increase the appetite and arterial tension, promote digestion, and are particularly serviceable in relieving the persistent headache which accompanies nervous asthenia. In neurasthenia, in mild hysteroid affections, in the various neuralgias, particularly ovarian,

and in the nervous tremor so often seen in confirmed drunkards, they are of peculiar service. Patients who suffer from irritable or weak heart, needing at times an analgesic, can take them without untoward after-effects, knowing that the heart is being fortified. In delirium tremens they relieve when there is great restlessness with insomnia and general lowering of the nerve power. The pain of locomotor ataxia yields to treatment with Antikamnia Tablets in a remarkable degree, their analgesic power being of a peculiar kind, in that they will relieve painful affections due to pathological conditions of the peripheral nerves, as neuritis, etc., also lumbago, sciatica, and myalgia. In chronic catarrh of the stomach, with its often accompanying headaches, in cardiac dropsy, and in ascites, they are of decided benefit."

Fetal Ascites with Dystocia.

Stanley P. Warren (*Am. Jour. of Obst.*) The fetus, which was male, and weighed six pounds, had been dead several days. The obstruction to delivery was an enormous enlargement of the abdomen, due to ascites to the amount of 550 c.c. of fluid. The liver was not enlarged, and the other viscera of the peritoneal cavity appeared to be healthy. The mother had a flat pelvis. The source of the fetal ascites could not be determined, as no microscopic examination of the fetal organs was made. Ballantyne (*Antenatal Pathology and Hygiene*), of the 65 cases reported, fetal ascites was due to syphilis in eight cases, and in 19 to hydramnios. Chronic peritonitis, less frequently acute, was found in 50 per cent. of the cases autopsied. In 36 cases out of 45 there was premature termination of pregnancy, and in 4 cases out of 64 the mother died from prolonged labor and operative violence. The fetus dies just before birth, or soon after; in one case it lived after paracentesis, with the removal of 500 c.c. of fluid. Under ordinary conditions birth must be effected by traction, more or less difficult, depending upon the amount of distention of the flat abdomen, by aspiration, or by embryotomy. Any or all of these methods being necessarily combined.

Cause and Treatment of Various Kidney Conditions.

W. H. Thomson (*Med. Rec.*) suggests that the high tension pulse of nephritis is due to an agent in the blood, similar to, if not, adrenalin, which causes kidney shrinkage and diminished urea excretion. The effects upon the circulatory apparatus in nephritis are exactly similar in kind to those caused by the intravenous injection of adrenalin. The possibility of the suprarenals being stimulated to increased secre-

tion in cases of chronic nephritis is offered. Besides the increased blood pressure, investigation has shown that the suprarenal extract has a wonderful effect in causing a shrinkage of the kidney itself and naturally a diminution of urea secretion. In the treatment of cases manifesting extreme arterial tension and overacting heart when the ordinary vaso-dilators prove inefficient, as they do so frequently, the tincture of aconite in doses of five minims every three or four hours is often very beneficial, the urea at once being very much increased. The author mentions a class of cases among women especially manifesting the symptoms of some nervous disorders and usually diagnosed as neurasthenia or hysteria. No organic lesions are found, but if the urine is carefully examined the excretion of urea will be found to be far below the normal. It is believed that digestive derangements are frequently the cause of this inhibition of urea elimination, just as normally the intake of food stimulates the excretion of urea. They usually feel worse in the morning, and the pulse is of low tension. It is believed that a bi-weekly dose of blue pill alternating with the pulv. glycyrrhizæ Co., and the steady administration of intestinal antiseptics, along with the regulation of the diet will in time relieve them of their multitudinous nervous symptoms, and more surely than the nervines. Among the intestinal antiseptics he has found the best results from ten-grain doses of sodium or ammonium benzoate, with the same of phenol bismuth, or salve, with castor oil in shellac-covered capsules. A case of chronic spermatorrhea in a married man, resisting all methods of treatment ordinarily employed, is described. He had become almost a nervous wreck when a T-bandage was applied and a firm cylindrical pad two inches in diameter and covered with chamois skin was placed against the perineum and held in position by the bandage. The improvement was very marked in this instance, and the same method of treatment is recommended for the annoying cases of too frequent nocturnal emissions.

A Review of Some Recent Investigations Relating to the Pancreas.

Hart (*Medical News*) gives literature relating to the physiology and diseases of the pancreas. To Pawlow is due the credit for the impetus recently given to research along these lines. Opie and Bayliss and Starling are prominently mentioned. The conclusions of the latter are especially interesting.

The secretion of the pancreatic juice is normally evoked by the entrance of acid chyme into the duodenum, and it is proportional to the amount of acid entering

(Pawlow). This secretion does not depend on a nervous reflex, and occurs when all nervous connections of the intestine are destroyed.

Contact of the acid with the epithelial cells of the duodenum causes in them the production of a body (secretin) which is absorbed from the cells by the blood current, and is carried to the pancreas, where it acts as a specific stimulus to the pancreatic cells, exciting a secretion of pancreatic juice proportional to the amount of secretin present. This substance, secretin, is produced probably by a process of hydrolysis from a precursor present in the cells which is insoluble in water and alkalis, and is not destroyed by boiling alcohol. Secretin is not a ferment.

The pancreatic juice obtained by secretin injection has no action on proteids until "enterokinase" is added; the action on fats is increased by the addition of succus entericus. It is, in fact normal pancreatic juice.

Secretin rapidly disappears from the tissues, but cannot be detected in any of the secretions. It is not possible to obtain a body resembling secretin from any tissues of the body other than the mucous membrane of the duodenum and jejunum.

Secretin solutions, free from bile salts, cause some increase in the secretion of bile. They have no action on other glands. Acid extracts of the mucous membrane normally contain a body which causes a fall of blood pressure. This body is not secretin, and the latter may be prepared free from the depressor substance by acting on desquamated epithelial cells with acid. There is some evidence of a specific localized action of the vasodilator substances, which may be extracted from various tissues.

On the Hypodermatic Use of Adrenellin Chloride in the Treatment of Asthmatic Attacks.

Bullowa and Kaplan (*Medical News*) state that the repeated failures of antispasmodics to cut short the attack led to the trial of adrenalin chloride, hypodermically, as a general vaso-constrictor, in accordance with the angio-neurotic theory of the etiology of the disease. They report three cases at some length, in all of which the usual treatment was without avail, but which were promptly cut short by injections of adrenalin. The attacks recurred as frequently under this treatment as before, but each attack being promptly aborted, the evil sequelæ following prolonged attacks, such as emphysema, would seem to be prevented. With fresh preparations of the drug, 3 to 6 minims of the 1 to 1000 solution, hypodermically, cut short the asthmatic seizure, usually without disagreeable sequelæ. It is worth while mentioning the

fact that solutions of adrenalin chloride deteriorate from exposure to light and air and that the dose must be increased accordingly.

The immediate vaso constriction necessary to cut short an attack can only be obtained by the hypodermatic method of administration. Much larger doses by the mouth do not cause this effect; sprays into the throat are also inefficient. Adrenalin chloride used externally produces only a local constriction of the blood vessels; for this very reason it is poorly absorbed from the mucous membranes and in order to affect the circulation in the lungs it must be introduced under the skin. Its hypodermic administration is not painful. Sometimes there is a blanching of the tissues about the site of injection; this may be obviated by injecting it more deeply.

Cancer of the Prostate.

Greene (*New York Med. Jour.*) has endeavored to collect all recent articles on the subject in order to classify the early symptoms, and thus aid a correct diagnosis in view of taking the disease in time, so that the surgeon may entirely check the growth, or, at least, prolong the life of the patient. It is only in late years the distinction has been made between cancer of the prostate and that of what was then called sarcoma of the prostate. In the majority of cases the so-called hypertrophied prostate of the aged is a chronic inflammation. Naturally, then, we can expect a cancer to follow, as it often does in other parts of the body, if any inflammation is left to become chronic. According to the examinations of Alberan and Halle, as high as fourteen out of one hundred of so-called hypertrophies of the prostate were found to be cancer. It is doubtful if not more of the hypertrophied prostates were not cancerous. Greene and Brooks report three cases of cancer in fifty-eight examinations of hypertrophy.

He says that the very important subject of early infection of the lymphatic glands has been discussed thoroughly by Pasteau. He says eighty five per cent. is the proportion of affected lymphatic glands, thus making it hopeless to operate unless before glandular metastasis sets in. This is where the difficulty lies: how early does cancer of the prostate occur? An average, according to histories, one would say over fifty years of age, although there are exceptions. One was reported by Carlin as young as thirty-eight. In a great many cases the patient has trouble with the prostate several years before the cancer develops. Cachexia hardly need be mentioned as having any especial diagnostic value, but if it appears suddenly in an old prostatic, it may lead to a suspicion that a malignant growth exists. On the other hand, pain seems to be quite

an accompaniment of cancer, and as it may occur before metastasis into the neighboring lymphatics has set in, pain in an old prostatic without other cause to account for it, should lead to operative means immediately, if no strong reasons are against it.

Bloody urine, when in connection with these former symptoms, is a common occurrence in cancer. Careful use of the cystoscope is of great aid.

The amount of residual urine helps very little in diagnosing, due to the fact that cancer of this organ can be yet too small to obstruct the urinary flow. Most of these cases, however, have previously had gonorrhea.

Correct diagnosis as to cancer or not, by rectal or urethral examination, is very uncertain. Guipin considers the feeling of a cyst, the contents of which cannot be made to disappear by massage of the gland, to be one sign of cancerous growth. A sudden increase in the size of the prostate in an old prostatic is unfavorable. Cancer more usually locates in the lateral lobes of a gland than in the so-called third lobe.

Mastoid Disease and Extradural Abscess.

Oppenheimer (*Medical News*) says that a distinction should be made between a true epidural abscess—that is, a collection of pus localized and confined between the inner osseous wall and the brain membrane—and the so-called extradural suppurations, which are more or less frequently found during an extensive mastoid operation, when the dura is in part exposed and forms a portion of the inner wall of the purulent cavity in the mastoid. Epidural abscess is the most frequent complication of mastoiditis, and may be the cause of the sinus infection, or may be responsible for the development of brain abscess. The two most common sites for the development of the pus collections in the order of their frequency are, first, in the posterior fossa near the vertical portion of the groove for the lateral sinus, and, secondly, in the middle fossa on the superior surface of the osseous tissue forming the roof of the antral cavity. The dangers are increased when the pus collection is in close relationship to the sinus, on account of the tendency to secondary inflammation and thrombosis. The symptoms present in the early stage of extradural abscess possess no special characteristics, although one may suspect the existence of this condition when, in the presence of mastoid symptoms, the aural discharge suddenly becomes less or ceases entirely and the patient shows signs of meningeal irritation. The two most conspicuous signs in a number of cases are, severe and continuous headaches localized over the

affected area, and moderate elevation of temperature, seldom reaching over 102 degrees, undergoing slight fluctuations, but seldom reaching the normal. Even under most favorable conditions the diagnosis of extradural abscess is both indefinite and obscure. In many cases evidences of extradural abscesses are only disclosed when during a mastoid operation a fistula is found leading into the cranial cavity. The prognosis is very favorable if the abscess be evacuated by operative procedures. No other treatment than the surgical release of the purulent collection should be considered.

The Exogenesis of Cancer.

Alexander T. Brand (*Quarterly Medical Journal*) believes that cancer arises from without the organism by infection, and that infection occurs only under certain favorable conditions which render the organism vulnerable. In other words, that a precedent condition must be established produced by irritation with or without, injury, degeneration of tissues, chronic disease, or congenital susceptibility.

As to actual knowledge, we know that cancer is a specific disease, is propagated by infection and metastasis, seldom occurs in animals, favors certain localities and tissues, is preceded by irritation, is a local disease at the outset, and is marked by cachexia when well established. Illustrations are given showing the predilection of cancer for certain geographical locations.

In the matter of heredity the author denies that there is any evidence that transmission of the disease has ever occurred.

As to prophylaxis personal cleanliness is thought to be the key note. The Turkish bath is recommended as an assistant in attaining this end. Food should never be taken with unwashed hands, and vegetables which are to be eaten raw should be scrubbed.

Infected houses should be posted and the bodies, dejecta, and dressings of the cancerous should be burned. Electricity or light may prove curative in the future, and an efficient antiseptic may yet be discovered. Should a bacterium of cancer be found an antitoxine will doubtless also be found to destroy it.

Finally, the author believes that the exogenesis of cancer is clinically and logically proved, and that the discovery of a microorganism, fulfilling the law of Koch, is only a matter of time. He submits the following syllogisms: (a) All diseases infectious to the individual are infectious to others. Cancer is infectious to the individual. Therefore it is infectious to others. (b) All diseases infectious to the individual have an external organ. Cancer is infectious to

the individual. Therefore cancer has an external origin.

Pathologic Action of Roentgen Rays.

MacLeod, in the *British Journal of Dermatology*, reviews the usual ideas regarding the action of X-rays. A strong point is scored in the elucidation of the claim for bactericidal action of the Roentgen rays. The fact seems proven that the effect on micro-organisms is due to the changes in the tissues, making them unfit soil (Skinner), increased phagocytosis (Freund and Pusey), or an inflammatory change in the tissue treated, breaking away with the micro-organisms contained. The tubercle bacilli are stimulated (Wolfenden and Forbes Ross), and are only affected adversely by attenuation from overgrowth.

A careful review of the work of Doutrelepont (1901), Schultz (1902) and Carl Beck is given, showing the results of experimentation in X-ray phenomena. Beck divided the X-ray effects into degrees of burning, in the greatest intensity undergoing colloid changes. Pernet recognized the colloid changes. Sequeira found a state of lysis, at times fatty degeneration, under X-rays.

He summarizes as follows:

(a) That the X-rays in small doses have a stimulating effect on the elements of the healthy skin.

(b) In large doses, long exposures, close proximity of the tube to the skin, or employment of soft tubes, the rays are capable of devitalizing the tissue elements, interfering with the process of reproduction and causing their degeneration—all as the direct result of specific action of the X-ray.

(c) The more highly differentiated structures, such as the hair follicles, glands, nails, blood-vessels, are more readily and severely affected than less differentiated epidermal cells or the fibrous stroma of the corium.

(d) Pathologically altered cells are far less resistant than healthy cells, and are devitalized with small doses of the rays; that this destructive action of diseased elements may be taking place while the healthy elements may be stimulated to repair.

(e) The action of the rays is cumulative; when the cellular degeneration reaches a certain degree, the toxic products of the breaking down cells are capable of setting up an inflammatory reaction, which is a secondary phenomenon.

(f) This inflammatory reaction is peculiar in that it occurs in a tissue the vitality of whose various elements has already been impaired by the action of the rays, and in that it is associated with greater destructive changes than those produced by the actinic

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rays, and is apt to lead to ulceration and
necrosis, and is liable to be followed by an
imperfect process of repair.

Antistreptococcic Serum in the Treat- ment of Scarletina and Diphtheria.

Mackie, in the London *Medical Lancet*,
says that the variations in the reported re-
sults following the use of this serum in in-
fectious diseases is mainly due to the fact
that bacteriology has not yet decided the
relationship between the different cocci
that are met with in many entirely dissim-
ilar diseases. From his experience he feels
justified in drawing the following:

(1) Antistreptococcic serum is of dis-
tinct value in a certain number of cases of
scarlet fever, particularly in those in which
the throat lesion is severe and toxemia is
going on.

(2) Bacteriological examination will give
no sure guide as to the cases in which serum
will be beneficial, therefore it is advisable
to give the serum early and to make the
bacteriological examination afterward.

(3) The serum ought to be given early in
the disease, just as in diphtheria. The
longer the disease has lasted before the
serum is used the less likelihood is there
that it will be beneficial. Antistreptococcic
serum is too often brought in with the

strychnin and oxygen when it is unreason-
able to expect it to do good.

(4) If the first dose or two have no effect
on the temperature its continuation will
probably not be of any value.

(5) The serum is liable to produce urtic-
ario-erythematous rashes.

(6) Even in those cases in which it does
no good there is no evidence to show that
it does harm.

The writer has used the serum in the
treatment of those cases of diphtheria in
which the diphtheria bacillus was associat-
ed with the pus cocci, especially the strep-
tococcus. He believes that when there is
any evidence of a mixed infection, such as
a high fever, marked swelling of the cervi-
cal lymph glands, and sloughing of the
throat, much better results will be obtained
if the serum is given together with the
diphtheria antitoxin than when the latter
alone is given. Sepsis is the element in
diphtheria that is to be feared. Deaths
within the first ten days of the disease, and
most of the post-tracheotomy fatalities re-
sult from sepsis. If that is true, and there
is every reason to believe that it is, then the
antistreptococcic serum should be given
together with the antitoxin.

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The Diagnosis of Epithelioma of the Mouth from Tertiary Syphilitic and Other Lesions.

Hutchinson, in the London *Practitioner*, offers the following considerations on this subject: (1) From at least 30% of patients with epithelioma of the tongue, a history of syphilis can be obtained. (2) In perhaps 20%, epithelioma supervenes on tongues that have been the site of chronic syphilitic inflammation. Thus syphilis of the mouth predisposes to, and often passes directly into, cancer. (3) Gummatous ulcers are frequent on the palate, the back of the pharynx, and the dorsum of the tongue. Epitheliomata are commonly situated upon the

free borders of the lips, the sides of the tongue and the floor of the mouth. (4) If an ulcer exists, the induration and projection of its edge is greatest in cancer. (5) The examination of a scraping from the floor of an ulcer is of undoubted value. (6) Septic, syphilitic or tubercular ulcers, as well as epithelioma, of the mouth, frequently cause glandular enlargement in the neck. (7) In leucoplakia of the tongue the patches are of a dense white color and perhaps fissured, but there is less tendency to ulceration than in chronic syphilitic tongues. (8) The risk of epithelioma developing is very great in cases of true leucoplakia.

The Treatment of Cleft Palate.

Arbuthnot Lane, in the *Edinburg Medical Journal*, describes his method in cleft palate operations. As the result of experience in several operative cases, he is in favor of very early operation; he suggests the day after birth as being the best time to choose. At this period of life it is possible to provide a well vascularized, thick flap which is practically three times as broad as can be obtained when the teeth have begun to encroach materially on the mucous membrane or perforate it. Again it is of advantage to operate early, since the mouth is separated from the nose, and the breathing air, being transmitted through the latter only, the naso-pharynx develops much more fully, which is often not the case if operation is deferred.

He uses a flap which, when raised, comprises all the soft parts down to the tensor palati. This flap may be made as extensive as necessary by encroaching on the cheek. This method is incomparably more certain than that of simply paring the edges and bringing them together, since in the latter operation, it is generally necessary to divide the palate muscles vertically on either side. In the former operation the continuity of the muscle is unimpaired and no cicatricial tissue is formed, neither is there loss of function.

The after-treatment is simple; the hands are secured, there is no change made in the diet nor is any attempt made to sponge or spray the mouth. The silk stitches are removed in 10 days. Should a hare lip complicate the cleft palate, the lip is dealt with as soon after the operation as possible.

The Management of Disturbed Lactation.

J. Walker, in the *Brooklyn Medical Journal*, lays great stress on the importance of maternal nursing for the reason that it increases the mother's affection for her offspring, and because it gives the child a good start in life. If there is a deficiency either in the quantity or quality of the milk, as always is evidenced by the child not gaining in weight as it should, a chemical and microscopical examination of the milk should be made in order to ascertain the cause of the difficulty. We give Dr. Walker's conclusions as follows:

1. That the various medicinal and much advertised galactagogues have been of little value.

2. That cow's milk taken by the nursing woman in such quantity as can be digested improves the quality and quantity of the woman's milk better than gruels, panadas, soups and porridge. A mixture of one teaspoonful of tincture of ginger with one tumblersful of slightly sweetened milk is valuable, especially taken at night.

3. That an abundance of plain, wholesome food and regular action of the bowels are important. On the contrary, gross eating and poor defecation not infrequently lessens the quantity of mother's milk.

4. That regularity in times of nursing is most important and also allowing the child to take all it will at each nursing.

5. That every day exercise by both mother and child in the open air, but not to the point of tiring, helps the child's digestive powers and increases the supply of milk. Exercise in-doors even with the windows open, will not take the place of out-door exercise.

6. That a cheerful disposition goes far toward keeping the milk in good condition. Anger, worry, excitement and insufficient sleep have the opposite effect. Some women, therefore, will never be good nurses.

7. That every nursing woman should wear easy-fitting, comfortable clothing, especially about the chest, abdomen and neck, and should keep heavy distended breasts from sagging.

8. That carefully selected tonics, laxatives and even hypnotics are at times necessary.

Trophic Changes, the Result of Nerve Injury.

Alex. James (*Scot. Med. and Surg. Jour.*) gives the histories of 3 cases, in which nerve injury was followed by trophic changes which gave rise to multiple lipomata, Raynaud's disease and onychia. The first case was that of a healthy man who, while at work in a mine, sustained an injury to the back which confined him to bed for 2 months. In addition to the rigidity of the spine from cervical to lumbar region, paresis of right arm and tenderness of vertebral spines, he developed multiple lipomata, distributed over back and abdomen. There was a vague subsequent history of complete paralysis. The second was that of the local "asphyxia form" of Raynaud's disease in both hands, apparently caused by a bullet wound in the metacarpophalangeal joint of the left middle finger. After the affected finger was amputated, the cicatricial tissue freely opened and removed, and the nerves freed, the "local asphyxia" rapidly disappeared in both hands and recovery was complete in a few weeks. A third case was that of onychia of 3 fingers, due to nerve injury caused by tubercular disease in the elbow joint. After unsuccessful treatment for 7 years, the median nerve was freed from a mass of cicatricial tissue in front of the joint, followed by immediate improvement in the onychia and, finally, recovery.

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Treatment of Umbilical Hernia.

J. Collins Warren, (American Journal of Surgery and Gynecology) says that umbilical hernia in children rarely comes under the surgeon's care, as it is usually kept reduced by a suitable support until the opening disappears and a cure is effected. The typical surgical case is that of a woman of middle or advanced life, corpulent habit and mother of a large family. The etiology seems apparently to be the changes of pregnancy and the relaxed condition in which the parts are left, the force of gravity and the pressure of clothing causing a giving way of the weakened walls. As the adipose tissue accumulates, the cicatricial tissue of the umbilicus is drawn on and drags the funnel-shaped fold of peritoneum through the abdominal wall. While this form of hernia has generally been considered more liable to relapse than the others, recurrences, he thinks, are becoming fewer with improved conditions. This is not due to new methods, but to more care in suturing and in perfecting the operation. In the operation he prefers the hernial sac should be exposed by two slightly curved incisions on the median line, meeting above and below and exposing the walls of the sac as far as the neck and surrounding aponeurosis. The sac should then be opened and the contents freed from adhesions and

returned into the abdomen. If the omentum is matted together it had better be excised at a point below the portion usually occupying the sac. The sac should then be carefully excised and the vessels secured. The opening that is left in the abdominal wall is oval, with its long diameter lying at right angles to the linea alba. The peritoneum should, if possible, be separated from the fascia and secured by fine sutures. The edges of the hernial ring consist of the tendinous raphe formed from blending of the aponeuroses of the abdominal muscles. The accurate coaptation of these edges is important and is best effected by closing the ring transversely instead of vertically, which is much easier. The material he prefers for suturing the peritoneum is fine silk, No. 8, such as is used for intestinal suturing; a little larger silk is used for suturing the aponeurosis; but most operators now prefer chromicized catgut. Enough of this layer should be taken up to hold the sutures securely. The adipose layer and outer integuments should be trimmed with a knife so as to fall easily into apposition. This involves excision of the umbilicus, and a certain amount of skin on either side. The adipose layer is then caught together by medium-sized sutures and the skin united by silk worm gut. A new feature in the treatment of these cases is excision of the

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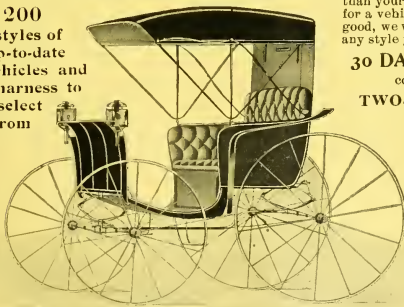
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thick layer of adipose tissue, some times several inches in thickness in the median line. To remove this a median incision should be extended through the skin and subcutaneous adipose tissue from a point two inches below the ensiform cartilage to the transverse fold defining the upper limit of the mons veneris. The skin, with the adipose tissue still attached, is then dissected away until the integument has been freed as far as the loins. The vessels that are divided are easily secured. After hemorrhage has been arrested the skin should be attached to the aponeurosis by two or three catgut sutures to prevent dead spaces, and the edges of the skin should be united in the usual way by silkworm gut. This leaves

a long cicatrix, but it contracts considerably with time. It is a better method than the transverse or crescentic-shaped incision by which the fold itself might be excised.

Subperitoneal Rupture of the Bladder with Anomalous Symptoms.

Stewart, in the Scottish Medical and Surgical Journal reports the case of a man aged 40 years, who had been drinking heavily, was, while walking, seized with pain in the lower abdomen so severe that he fell. The pain continued and vomiting came on. On the fifth day he was admitted to hospital suffering from pain in the lower abdomen, most intense over McBurney's point. He had not retained food since the



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onset and the bowels had not acted, but flatus was passed. He said he had no difficulty in micturition. The pulse was 78 and the temperature was 98.8 deg. F. There was a purpuric rash over the body. The lower abdomen was tender and distended. The distention evidently was due to a large swelling, resembling a six months' gravid uterus displaced to the right, which extended from the pubes to the umbilicus and from the right iliac fossa to the left beyond the middle line. It was firm, dull, very tender, and distinctly margined. Rectal examination showed that it did not extend into the pelvis. He passed much urine without difficulty. A No. 10 rubber catheter was easily passed and about nine ounces of clear urine containing a few dark-brown granules were drawn off. The urine did not contain albumin or blood. An enema

gave a good result. On the sixth day the pain was less, he still vomited, and there was occasional hiccough. Laparotomy was performed by an incision midway between the umbilicus and the anterior superior spine of the ilium and parallel to Poupart's ligament. On opening the peritoneum from two to three quarts of clear, yellow, inodorous fluid gushed out. There was no smell of urine. The incision exposed the edge of a dark, smooth swelling, about an inch in thickness, extending upward to the umbilicus. A coil of congested small intestine was adherent to it by means of recent lymph. On incision the swelling showed only blood-stained tissue and extraperitoneal fat. No tear in the bladder could be discovered. The abdomen was washed out, drained and closed. The patient recovered from the operation but became

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gradually weaker and died on the ninth day. The necropsy showed recent adhesions between the intestines and anterior abdominal wall. There was no fluid in the peritoneal cavity. In front of the peritoneum and behind the pubes to the right was an infiltration of the tissues with greenish-brown non-fetid fluid. On incising the bladder an aperture of the size of a pea was found communicating with the retropubic infiltration. In this case ruptured bladder seemed to be excluded by the normal micturition and the withdrawal of a fair amount of urine by the catheter. The swelling was undoubtedly due to extravasated urine.

Cancer of the Uterus: Its Cause and Cure.

Perkins (International Journal of Surgery) says in concluding a valuable paper:

1. That cancer of all parts of the body appears to be more prevalent than it was a few years ago.

2. That cancer in the beginning is purely a local disease, and may at that time be completely cured by operation.

3. That other forms of treatment are not curative, and should be used only in inoperable cases.

4. That cancer of the cervix occurs much more frequently where lacerations exist, small tears being apparently as apt to produce the trouble as more extensive ones.

5. That in every operation for lacerated cervix the tissues removed should be subjected to a histological examination.

6. That in every case where there is the slightest suspicion of cancer a section should be taken and subjected to examinations.

7. That occasionally from curettings of the uterus a diagnosis of cancer may be made.

8. That heredity does not appear to play any very important part in the etiology of cancer.

9. That the family physician is the one who, above all others, can do most to lessen the mortality of all kinds, and especially from cancer occurring in the uterus.



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Excision of the Cecum.

F. T. Paul in The British Medical Journal, reports three cases. The first was a man 32, who had suffered for the past 6 months from colicky pains, flatulence, dyspepsia, and the other symptoms of progressive partial obstruction. Operation was performed, an incision being made over the cecum. The latter was found infiltrated with malignant disease. This, together with the lower end of the ileum and the whole of their attached mesentery, was removed; the ends of the bowel were brought out, and glass tubes inserted. The result was unfortunate, sloughing of the bowel occurring owing, perhaps, to too much of the circulation having been cut off. The next was a patient of 53, who looked much older. His symptoms were of the same type as in the preceding case. A soft tumor could be detected in the region of the cecum, which the operation proved to be a cancerous condition of that pouch. It was excised, and a glass tube inserted. The patient's condition was good for a few days, when he took a turn for the worse, and died from exhaustion, 3 weeks after operation. Necropsy showed the wound healed perfectly about the stump. The third patient was a woman of 51. Her symptoms were again

of the same general type. A large movable tumor could be detected in the cecal region. Laparotomy was performed, the cancerous cecum excised, and the patient made a good recovery. Attention is called to the fact in these cases, as well as in malignant obstruction anywhere in the bowel, symptoms as a rule appear only after the tumor is of such size as to offer mechanical obstruction to the fecal current. Unfortunately, at such time the case has progressed so far that the condition is almost hopeless.

Autointoxication and Its Relation to Disorders of the Nervous System.

B. L. Wyman, in the Alabama Medical Journal, says that autotoxemia is an etiological factor of great importance in many functional disorders of the nervous system.

That these persons produce symptoms by either lessening, retarding, perverting, or arresting the functional capacity of the nerve center by interference with the transmission of nerve impulses.

That the disturbances involve both the central and peripheral neurons.

That repeated and chronic autointoxication may lead to structural alterations in the nerve cells and fibers.



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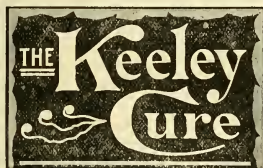
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Lumbago: Its Lessons and Analogues.

William Gowers (*British Medical Journal* of January 16, 1904), says that aperients are of the first importance in all rheumatic and pseudogouty cases, and nothing is of so much value as salines. They free the system of bile far more than the so-called "cholagogues." Taken into an empty stomach they seem not to be absorbed, but to pass on into and through the intestine, augmented by the exosmosis they excite, and they carry the bile they find in the bowel. This has done what digestive work it had to do, and much of it would simply pass back into the blood, through the liver, and increase the amount of harmful matter in the general circulation. At least this is understood to be the reason why salines do remove bile abundantly, and improve the general state. But if a saline is taken when the stomach contains food, it seems simply to mix with this and to be absorbed, and its valuable "flushing out" action is not obtained. Moreover, it seems to pass

through the stomach more readily, and to excite osmosis and peristalsis in the bowel more effectively if concentrated than if dilute; and thus the stronger aperient waters act better than those that are dilute. That which differs in any way from the normal character of the intestinal contents may have a similar effect; that which is less dilute, just as the bladder is irritated by watery urine as well as by that which is concentrated.

The medicinal agents which have most effect on articular rheumatism seem to have far less influence on rheumatic muscular fibrositis. The salicylates, for instance, seems to do little good, except in the most acute form. In this it is very difficult to discern with precision the effect of any therapeutical measure. We cannot try experiments in severe suffering. We can very seldom secure the essential condition for observation, namely, that the agent to be tested shall be used with no other change in the influences to which the patient is ex-

posed, that no other attempt to do good shall be made at the same time. Hence doubt must attach to many of our records of apparent good, and they need to be confirmed by subsequent observations before they possess weight. He mentions this because this morbid state is one of those in which the opportunity for increasing and making sure our therapeutic knowledge comes chiefly to the general practitioner. But we may give the salicylates, or salicin, or aspirin. The salicylate of potash or lithia seems a more reasonable salt to use than the more common salicylate of soda. The salicylates have the advantage that we cannot obtain, in combination with them, the diuretic influence of nitrous ether. He says that most good is obtained in the early stage from nitrous ether, citrate of lithia, and colchium, with which small doses of perchloride of mercury may be combined if the affection is of considerable intensity.

The developed brachial form is extremely obstinate, especially when the fibrositis has spread to the nerves or joints. It is often difficult to perceive that any treatment has a marked effect if the opportunity of the early stage has been allowed to pass. The malady lessens, and passes away in time, leaving only such lasting effects as neuritis or arthritis may have caused. Good is certainly done by superheated air, but the applications have to be continued for weeks, and the accessory incidental disturbance seems to lessen the benefit derived.

The traumatic form of tendinous fibrositis, when it settles down to a satisfactory condition, with pain on any tension, and often some tenderness on pressure, resists almost all treatment. It also passes away in time, but unfortunately the time is long before the tendency to subside manifests itself. If any constitutional condition seems to cooperate in perpetuating the effects of injury, this of course should be treated. It is chiefly to be discerned when fibrositis is set up by slight habitual strain. Rest is important, but is not easy to maintain for an adequate time.

Counter-irritation sometimes lessens the pain, and the actual cantry is certainly the most effective form. A local measure that often does good is the deep hypodermic injection of cocaine, repeated daily for two or three weeks. It unquestionably promotes the subsidence of the sensitiveness, provided the ease obtained is not abused by increased exertion. Probably eucaïne would be equally effective.

Acute Tonsillitis: Its Treatment by the Local Application of Tincture of Iodine.

Samuel Floresheim, in *Medical Council*, says that we have in this simple and widely

known remedy an exceedingly powerful and helpful therapeutic agent which can positively be relied upon when other remedies have failed to act.

I do not now wait for the ordinary remedies to act, but apply the tincture of iodine at once to the inflamed area whenever it is indicated.

So much reliance do I place on this remedy that very often I do absolutely nothing else but locally apply it. At first I was surprised to hear from patients of its powerful and rapid action; now I should be surprised to hear from patients that it did not act well.

The disease is one that demands prompt interference on the part of the medical attendant, and the method of treatment which gives the most rapid relief should be employed.

The method of application is simply to saturate a camel's hair throat brush with the drug, depressing the tongue with a spoon or other contrivance, and rapidly and thoroughly paint the remedy over the inflamed area.

Should the patient complain, after two minutes, of an intense burning in the throat, a simple gargle, once or twice, of warm water, will give relief. Care should be taken that gargling be not done too often, as some burning is essential to obtain the desired result. If the burning is only moderate, a gargle is not advised. Should the patient experience no burning within five minutes after the application, it must be repeated.

When marked improvement follows the application in twenty-four hours, the application is not renewed. If very little or no improvement is observed, a second thorough application of the remedy is advised. A third application has never been required.

The most stubborn cases of simple, acute or follicular tonsillitis will always yield to this treatment. Other medication may be employed, at the discretion of the medical attendant, but is seldom necessary. The diet should be simple and nourishing, as is usually directed. Constipation should be overcome. A good movement of the bowels with a saline, though the patient states they are regular, often helps considerably toward a more rapid convalescence in acute tonsillitis.

Esophagus Stricture Dilated by a Thread and Rubber Tube.

Charles P. Dowd (in the *Annals of Surgery*) reports a case of a child four years of age, who, in February, 1903, had swallowed some lye and who for several weeks had suffered from increasing difficulty in swal-

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lowing. She had also had pneumonia and at its termination, April 6, was greatly emaciated. A gastrostomy was done, after which she gained rapidly. The stricture, however, remained, and it was impossible to pass an instrument either from above or below. Although in the latter case the cardiac orifice was located by means of the Kelly cystoscope, no instrument of any kind could be passed. When a few drops of milk were introduced into the esophagus from above, a small drop could after a time be detected through the cystoscope. An attempt was now made to pass a silk thread through the stricture by floating it down with a few drops of water, and this after much patient effort succeeded. Other threads were now drawn through, the stricture walls were slightly sawed with an up and down movement and a piece of rubber tubing the size of a No. 15 French catheter was drawn down into the stricture, which it dilated by its elasticity. Larger tubes followed in the same way, until finally bougies could be passed, and by July 17 she was able to take ordinary solid food.

A Case of Chronic Internal Hydrocephalus in a Youth.

Strong and Roberts, (*Journal of Nervous and Mental Diseases*) report a case of a boy of seventeen years who entered the hospital with symptoms and signs of heightened intracranial pressure. Ten years before he had compound fracture of the skull to the left of the vertex; perfect recovery in four months. Two and one-half years later he had a contusion of the occiput by kick of a horse. Recovery after short period of treatment as an outpatient. His habits were good, personal and family history negative. During seven months prior to admission he had developed vertigo, unconsciousness at irregular intervals lasting two minutes, a peculiar aura consisting of numb feelings about the eyes and the tongue. Then followed agitation of the limbs and then of the body. The tongue was not bitten. Projectile vomiting, headache (general), blindness (choked discs), and bilateral loss of smell. The left knee jerk was absent and there was marked ataxia.

These symptoms suggested tumor in the

cerebellum. Operation was made by trephining the right occipital bone. There was no pulsation, a considerable degree of hernia cerebri occurred without evidence of growth or lesion. The right ventricle was then tapped and a profuse discharge of several ounces of ventricular fluid under pressure followed. The pulsation in the brain returned and some improvement in the patient was observed. He lay quietly for some days, and without the general headache. There was slight improvement in vision, also in the knee jerks. Seventeen days later he grew worse, the ventricle was again tapped, there was some improvement for a short time, but he did not rally, and died eighteen days after the first operation.

At autopsy there was found a nickel sized adhesion of pericranium in the left frontal region. The pia was lifted from the sulci in the vertex by a clear fluid containing a few flocculi. Pacchionian granulations were extensively developed as in old age. The pia at the base was quite overgrown, especially about the olfactory nerves and the optic chiasm, and around the vessels of the circle of Willis, which were normal. There was edema of the pia everywhere, but it was not evidently thickened. There was no evidence of tuberculosis.

The right anterior choroid artery showed a well marked yellowish patch of arteriosclerosis three millimeters in diameter, four centimeters from the base of the artery, two-thirds occlusive. Thus, there existed chronic leptomenigitis, focal sclerosis of the right anterior artery, chronic inflammatory changes in the right choroid plexus, epicerebral edema and internal hydrocephalus.

This case affords evidence against idiopathic internal hydrocephalus. A brief review of reported cases, and of conclusions, accompanies the above report.

Hypertrophy and Erosion of the Os Uteri.

W. J. Sinclair (*Four. Obst. and Gyn.*) does not approve of the old treatment by caustic substances applied to the "ulceration" of the womb. The abstraction of blood by punctures or diminution of congestion by glycerine tampons is more rational treatment as a step preliminary to restoration of the position of the uterus. The congestion cannot be relieved unless the tampons raise the uterus up to some extent and relieve the flexion. The extent to which the hypertrophy with erosion diminishes is some measure of the beneficial effects of the treatment. When in a case of retroflexion, the uterus appears to be restored to its position and retained by means of a pessary, inspection of the posterior lip from time to time will alone show whether

the success of the treatment is complete or only partial, or if relapse has occurred, owing to want of sufficient support by the pessary. Where adhesions or great enlargement of the body exist, cure cannot be effected without operation. Ventrifixation is, in the experience of the writer, a safe and effective operation for chronic retroflexion with adhesions, or with the body greatly enlarged from strangulation. Whether the operation should be resorted to in antelexion with bladder symptoms, the writer has formed no opinion. Hypertrophy due to laceration of the cervix and flexion cannot be rationally treated by amputation of the vaginal portion. Such operations are irrational and are not justifiable during the child-bearing time of life, nor at any other, except in some cases of malignant diseases.

The Clinical Significance of Arteriosclerosis.

Fitz, in the Boston Medical and Surgical Journal, considers this subject under three general headings, referring to groups of arteries, viz., (a) central, (b) peripheral, (c) visceral. In central arteriosclerosis, in which are affected the aorta and its branches the diagnosis depends on the age and examination of them. Although most people over 50 have in them some evidence of vessel-wall change, there are exceptions, for even in the young it is sometimes manifest. In peripheral sclerosis the physical examination of the accessible arteries establishes at once the diagnosis, although the evidence of an enfeebled circulation is usually found in discomfort, or severe pain with numbness in the extremities, and by the rapidly-induced fatigue and cramps in muscles. The diagnosis of visceral arterio-sclerosis depends on the recognition of the various disturbances of function and the discovery of the evidence of central or peripheral arteriosclerosis.

Miscellaneous.

Pepsin is undoubtedly one of the most valuable digestive agents of our *Materia Medica*, provided a good article is used. Robinson's Lime Juice and Pepsin, (see page vii, this number) we can recommend as possessing merit of high order.

The fact that the manufacturers of this palatable preparation use the purest and best Pepsin, and that every lot made by them is carefully tested, before offering for sale, is a guarantee to the physician that he will certainly obtain the good results he expects from Pepsin.

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SUMMER COMPLAINT

The absolute safety of Listerine, its well defined antiseptic power, and the readiness with which it lends itself to combination with other indicated remedies, are properties which have led many physicians to adopt Listerine as the antiseptic foundation of their prescriptions for Summer Complaint.

A 32-page pamphlet on this subject, containing many valuable suggestions for treatment, may be had upon application.

Summer Complaints

— of —

Infants and Children



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The Treatment of Summer Diarrhea.

In the treatment of any form of diarrhea an accurate diagnosis must first be made. For convenience it is customary to classify diarrheas somewhat after this fashion: 1. Diarrhea of relaxation, or serous diarrhea due to disordered innervation. 2. Crapulous or lenteric diarrhea, due to imperfect digestion. 3. Catarrhal diarrhea, acute or chronic. 4. Ulcerative diarrhea, due to intestinal ulceration.

This classification is by no means perfect as is shown by the multiplicity of terms applied to the various pathologic states characterized by diarrhea. Thus we have the terms acute inflammatory diarrhea, acute summer diarrhea, choleraic diarrhea, dysenteric diarrhea, nervous diarrhea, tuberculous diarrhea, etc. In each case the diagnosis is determined by the actual condition prevailing, of which the intestinal laxity is usually but a prominent symptom.

The question of treatment is one of the utmost importance. Without entering into a discussion of what soon proves to be a very broad subject, it may be worth our while to consider briefly the status of the antiseptic method of treating intestinal disorders, especially those caused by pathologic organisms and of which diarrhea is the chief symptom. Apart from well-directed efforts to clear the intestine of bacteria, reduce the temperature, sustain the vitality of the patient, regulate the diet, secure proper hygienic conditions, rest, and good care, the selection of the proper antiseptic agent demands the exercise of the physician's best judgment.

Whether or not it be possible to attain intestinal asepsis is of course a debatable question, but it is a well-established clinical fact that intestinal antiseptics do good and modify the course of enteric diseases of bacterial origin, notably typhoid fever, dysentery and summer diarrhea. However, there is a difference in the degree of efficiency of the various antiseptics, the utility of many being limited by the risk of untoward action from excessive dosage. In those cases of ileo-colitis caused by the bacillus of Shiga many of the serious symptoms are due to a mixed infection, to combat which prompt and vigorous measures are required.

The experiments of Novy and Freer (*Contributions to Medical Research*, p. 114) with benzoyl-acetyl-peroxide (Acetozone) showed that this substance is extremely germicidal to the organisms found in the alimentary canal. Its administration to rabbits resulted in the "practical sterilization of the contents of the stomach." In several experiments with these animals "the intestinal tract apart from the cecal pouch

was found to be sterile." Neither bouillon tubes nor agar showed growths, though the controls gave abundant cultures. Other experiments showed that enzymes and toxins are also destroyed or rendered inert by Acetozone. Further study demonstrated not only the remarkable germicidal power of Acetozone, but also the fact that its aqueous solutions may be given internally, and even injected intravenously, without harm. From these data we infer that this substance ranks among the most powerful germicidal agents, while it exerts no harmful effect upon the human organism, and may, therefore, be employed as a therapeutic agent in the treatment of summer diarrhea and other infectious enteric diseases with the best effect. There seems to be abundant evidence to warrant the suggestion that Acetozone solution should prove most valuable in colonic flushing, as it is entirely free from the danger that attends the use of large quantities of even weak solution of mercuric chloride, and for that reason may be used fearlessly.

Clinical Observations.

In chalybeate therapy it is of utmost importance to select a form of iron which is readily tolerated by the gastric mucosa, which is invariably debilitated as a sequel of the general neurasthenia so commonly found in all anæmic conditions, either primary or secondary.

An ideal ferruginous preparation should also meet the following requirements: palatability, easy absorption and assimilation, and lack of astringent, corrosive or constipating effect.

Among the numerous chalybeates on the market, I prefer a preparation which seems to combine blood making as well as general reconstructive qualities, and which also acts as a tonic alternative, i. e., Hæmaboloids-Arseniated (with strychnia).

In a majority of my cases treated with this preparation, the patients have shown marked improvement not only in the increase of the corpuscular elements and the percentage of hemoglobin, but also in a general way as manifested by a good appetite, greater vivacity, good nature, lack of imaginary ills, freedom from the subjective symptoms of anemia, etc.

As illustrative of my results with this preparation, I herewith give the history of a few representative cases.

Case No. 1.—Mrs. S., age 30, married 7 years; last child 3 years old. Mother died from an obscure cause, at least the attending physician claimed so, as a definite diagnosis could not be made. It was positive, however, that tuberculosis was not the cause of death. Father of patient still

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FOR ERYSIPELAS
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living and in good health. About two years ago she developed symptoms of bronchial catarrh, which did not yield to treatment, and gradually prodromal symptoms of pulmonary tuberculosis manifested themselves. She emaciated very rapidly and suffered from anorexia, lassitude and lack of ambition to undertake even the least of domestic duties. Cough was a very prominent feature and at times very troublesome, persistent and dry. Microscopic examinations of her sputum evidenced an abundance of tubercle bacilli. On percussion, there was found an area of tubercular hepatisation under the right clavicle. I put my patient under the best hygienic conditions available; outdoor life, nutritious diet, etc. Moderate exercise was allowed and short non-fatiguing walks. As to medicinal agents, I put special stress upon Hemaboloids-Arseniated (with strychnia). At commencement of treatment her hemoglobin test showed 45%. I directed her to take one teaspoonful of the above preparation, increasing gradually to four teaspoonfuls, in milk or wine before meals, and in addition one to two minims of creosote after meals. She was kept on this treatment for about five weeks. The results were very gratifying. Her appetite showed a decided improvement. She would say with especial emphasis, "I can eat now." She became energetic, took interest in her domestic affairs and duties, commenced to do her sewing, her cough was not so persistent, the febrile exacerbations which were so pronounced in the afternoons, a regular hectic condition, showed marked diminution, she gained three pounds in weight and twenty-five per cent. of hemoglobin. She made a very rapid progress until her youngest child was taken sick. The confinement and worry incident to the nursing and attendance of the child undoubtedly over-taxed her energies, and her physical reserve forces, not being very abundant, her health again depreciated. The course pursued at the beginning of my treatment was then rigidly enforced with similar gratifying results.

Case No. 2.—Female, age 22 years. Family history negative. Menstruation commenced at the age of 14 years, more or less painful and profuse. She was employed as a clerk in a store. Her occupation necessitated a sedentary life and as a consequence she lost in weight and appetite and was very much constipated. She became very anemic and her hemoglobin test showed but 50%. Neurasthenia followed and she commenced to have morbid feelings, such as a dread of losing her mental equilibrium, a suspicion that everybody was watching her actions and criticising

her, etc. She had no ambition and no physical strength to endure some of her most trivial domestic duties. So she was put under the most appropriate hygienic and dietetic conditions. I prescribed Hemaboloids-Arseniated (with strychnia) expecting it to act as a tonic, reconstructive and chalybeate. After two months of rigid treatment she gained six pounds in weight and thirty-five per cent. of hemoglobin, appetite returned and her digestive organs resumed their normal activities. Her disposition became cheerful and the morbid feelings which had haunted her for so long disappeared, and complete recovery supervened.

Case No. 3.—Female, age 18. Consulted me for irregular menstruation, quite scanty and painful. She had poor appetite; bowels were habitually constipated. Had no ambition and the least effort would fatigue her. Her hemoglobin test showed 45%. Case was diagnosed as chlorosis. She was put on Hemaboloids-Arseniated (with strychnia) and in course of a month's treatment her condition was decidedly improved. Menstruation became more regular, appetite vigorous and her bowels, instead of being constipated during the administration of the ferruginous tonic, (which is generally the case) were regulated. This condition was, according to my observations, ascribable to the fact that the ferruginous content of the hematinic which my patient was taking was obtained from the vegetable kingdom in the form of iron-bearing nucleo-proteids, having no deleterious action upon the normal functions of the gastro-intestinal tract.—*N. H. Kassabian, A. B., M. D., Coopersville, Michigan.*

Prof. Netter, Member of the Paris Academy of Medicine, writes in the *Bulletins et Mémoires de la Société des Hopitaux* of April 28, 1904, concerning the administration of Collargolum by mouth and per rectum. He finds that the gastro-intestinal route, which Loebl and Jousset have used successfully, has the advantage of simplicity and often gives excellent results. By mouth he gives pills of 1-6 to 1-3 grain Collargolum with sugar of milk and glycerin; or solutions in albuminized water, 3-4 grain to a dessertspoonful, the daily dose being 2½ drams to 1 oz.

For rectal injections 1½ to 7½ grains Collargolum should be given twice daily. Or 1½-grain to 4½-grain Collargolum suppositories may be used. Several of his patients have taken Collargolum per os and per rectum for months at a time, one without interruption for a year.

In non-infectious diseases, such as nerv-

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is the relief from the acute stinging pain of inflammations and eczematous eruptions about the muco-cutaneous margins when **Resinol Ointment** is applied. And a permanent cure is effected by this remedy with greater facility in all skin affections where a local application is indicated than by any other method. As a dressing for Burns, Carbuncles, etc., there is nothing approaches it.

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ous and gastric affections, in which silver nitrate is used, Collargolum acts well, has no caustic effect, and never causes argyria. He gave it to six epileptics and got the specific action of bromide from much smaller than the usual doses; and the distressing symptoms of bromism and the eruptions, bad breath and mental depression were avoided. He even used Collargolum alone and patients have passed five or six months without any attack.

He also used it successfully in several cases of neurasthenia and neuralgia. A chorea that was intractable to antipyrin and arsenic was cured by it and it was also effectual in migraine. Given by mouth in infectious intestinal diseases, dysentery, and muco-membranous enteritis of children and adults, it gave marvelously rapid results.

The internal use of Collargolum is also preferable to injection or inunction in infectious diseases with a prolonged course, such as phthisis pulmonum. In typhoid especially the drug has a direct effect upon the pathogenic organisms, diminishing fever and diarrhœa and shortening the disease. Results in influenza were equally good. In certain tuberculous cases Collargolum alone appeared useful. Cases with cavities seemed especially benefited; in sev-

eral there was rapid diminution of expectoration. In infectious endocarditis subsequent to biliary inflammation the prolonged use of the drug certainly lowered temperature and increased the patient's strength.

Faulty Elimination is a prolific source of trouble and the cause of many distressing symptoms pointing to no definite lesion, but complicating and obscuring the actual symptoms of a real disease. Such a condition is puzzling to the doctor and discouraging to the patient, often causing dissatisfaction with the treatment and lack of confidence in the physician, yet the whole train of symptoms may be only the result of a lowering of the tone of the secretory organs and the retention of poisonous material in the system. In all conditions which follow as a result of the blocking of the eliminative organs, such as colds, bronchial catarrh, la grippe, pneumonia and autotoxia, one of the first indications is to bring the eliminating organs up to the normal and put them in condition to perform their natural duty. A large proportion of the cases which doctors are called upon to treat during the winter and in the spring are furnished by neglected colds and after-effects of la grippe. These uncured affections keep

the system open to new attacks, the patient develops a bronchitis, or pneumonia, the kidneys are affected and sometimes left permanently weakened. A cold is by no means a simple affair which, left to itself, will always speedily get well. The acute stage will probably spend itself, and the patient may think he is free from further trouble, but such attacks render him more liable to further infection, and pneumonia, chronic bronchitis, and chronic kidney disease are some of the sequelæ of frequent colds. Therefore, these apparently harmless colds are to be taken seriously and cured absolutely as soon as possible. To cut short these attacks and restore the tissues to normal powers of resistance the Dad Chemical Co., of New York commend Respiton. It contains *asclepias tuberosa* and *berberis*. A teaspoonful in a glass of hot water every two hours will effect a complete cure in a few days.—*Interstate Medical Journal*, April, 1904.

Cystitis.

Dr. J. Henry Dowd, in the *Buffalo Medical Journal*, says the treatment of cystitis should be carried on from the following standpoint: (1) the cause; (2) relief of distressing symptoms; (3) rendering the urine bland and unirritating; (4) control of inflammatory process; (5) general treatment. The cause must be ascertained, but it is unnecessary to search an inflamed bladder for tumor, stone, foreign bodies, etc., as with our present knowledge of the urine and a careful history of the case, the above named conditions are generally ascertainable. He mentions several hypothetical cases and gives the treatment to be followed.

Case 1.—Diagnosis, acute cystitis. No evidence of previous bladder trouble, stone, tuberculosis or the like, but patient has chronic gonorrhea.

Treatment.—After thorough evacuation of the bladder a lukewarm solution of silver nitrate, 1-16000, without the aid of the catheter, by the Ultzmann-Dowd syringe. Presuming the case becomes chronic, he prescribes a pill of *hyoscyamus*, *belladonna* and *cantharidis* every three or four hours, and two teaspoonfuls of urisepin in the same intervals. A restricted diet has certain advantages. Irrigations should be continued about every third day, increasing the strength of the solution gradually.

Case 2.—The patient has hypertrophied prostate, stricture of deep urethra, urine always contains large amount of pus, showing chronic inflammation of the posterior urethra, bladder and pelvis of kidney. Condition has existed for years. Seventy-two

hours after severe wetting of feet retention occurs. In attempting to relieve himself the patient breaks the catheter, a small piece being left in the bladder. The passage of the instrument serves to temporarily dilate the stricture, but in twenty four hours acute cystitis develops. External urethrotomy with division of stricture and removal of foreign body; thorough washing of bladder with silver nitrate solution, and drainage; the following is prescribed:

R Ol. sant. albus, m 15
Urisepin, dr. ij

S.—Every three hours in a glass of water.

An Atlantic City Exhibit.

Speaking of the exhibits and the exhibitors at the fifty-fifth annual meeting of the American Medical Association, at Atlantic City in June, the *Journal of the American Medical Association* has the following to say regarding the medical book exhibit by Messrs. P. Blakiston's Son & Co.:

"An attractive and very instructive exhibit of standard medical, dental, pharmaceutical, chemical and allied scientific books is made by this well-known firm of publishers and booksellers. In the binding of some of the more recent cloth books issued by this house, viz.: *Montgomery's Gynecology*, *Edgar's Obstetrics*, *Tyson's Practice*, etc., an interesting departure has been made from the cut-and-dried styles in vogue for many years. The result is a volume of greatly increased attractiveness and distinguishableness. Another feature, too, is noted in the exhibit of this progressive house, and that is the increase in half-morocco and the decrease in full-sheep bound books. The preference claim for the morocco binding is that it is more serviceable in every way, and permits of a more richly and better and more durably bound book."

The *New York Medical Journal* and other medical journals throughout the country, represented at the meeting, also spoke of this exhibit along similarly favorable lines.

Urticaria on Arms and Chest.

The following treatment rarely fails to give relief:

Sponge the parts affected with a 2-per cent. solution of Hux-Sal (Antiseptic Salt) or apply as compresses to allay itching. Allow the body to dry and then apply with some friction.

R Mentholi 3i
Spt. Vini Rect. 3i
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Dose: $7\frac{1}{2}$ grs. before or during each meal.

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Well tolerated by the most sensitive stomach, since it is not affected by the gastric juice; soluble and readily assimilated; rapidly increases hemoglobin in anæmia and chlorosis; contains phosphorus, nitrogen and iron is of great value in malnutrition, general debility and all wasting diseases.

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Neurotic Conditions in Women.

Prof. Chas. J. Vaughan, Chair of Gynecology, Atlanta College of Physicians and Surgeons, writes: "Neuralgia constitutes the great cause of danger from the employment of hypnotics and narcotics, which only afford relief by numbing, but effect no cure. On the other hand, the formation of a drug habit rather aggravates the condition from which relief was originally sought. Neurasthenia, neuralgia and other manifestations, either of an active or passive character, are common and are always peculiarly rebellious to treatment. Cerebro-nervous affections peculiar to women associated with pathological disturbances of the reproductive organs are legion, and most

trying to physician and patient. I have found nothing so well suited to these cases as Antikamnia Tablets, administered in doses of from one to three tablets and repeated every one, two or three hours according to the attendant's judgment. These tablets afford complete relief without fostering a drug habit and their exhibition is attended with no unpleasant after-effects. For the relief of painful menstruation there is no combination of remedies so generally successful as Antikamnia and Codeine Tablets. Their sedative, analgesic and anodyne properties especially commend them in the neuralgic and congestive forms of this distressing affection."

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CHATTANOOGA MEDICAL COLLEGE



SESSION OF 1904—1905.

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Yancey County Society—President, Dr. J. L. Ray, Burnsville; Secretary, Dr. Chas. P. Edwards, Bald Creek.

Dr. Punton, Superintendent of the Punton Sanitarium or Home for Nervous Invalids at Kansas City, Mo., is adding a large addition to the Sanitarium building in response to an increased demand for accommodations by patients. There is also being built a large extension to the verandas, which will be used by the guests for places of recreation. The management of the Sanitarium appreciates the support received from the medical profession and has great confidence in the continued success of the institution.

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Hay Fever.

For years the malady known as hay fever has been the theme of many an able discussion. Its etiology, pathology, prophylaxis and treatment often have been the subject of study and experiment by physicians, and also by intelligent layman. The disease has been described as a catarrhal affection of the conjunctivæ and the mucous membrane of the respiratory tract, characterized by an annual recurrence at about the same date in a given case. Another view is that the disease is a neurosis, and that the local symptoms (rhinorrhea, sensory disturbances, etc.) are due to vasomotor paralysis.

The most conspicuous symptoms of hay fever are a burning and itching sensation in the nasal region and between the eyes; violent paroxysms of sneezing; a copious discharge of serum and liquid mucus from the nasal passages; profuse lacrimation; now and then, febrile manifestations; frontal headache; and in not a few cases, some asthma.

The diagnosis having been established the subject of prevention and treatment is of the utmost importance. It would be utterly useless and wearisome to attempt to review the list of remedies and the methods of treatment that have been proposed for this disorder. The interests of physicians and patients will best be served by a recital of facts respecting the most successful mode of treatment known at this time.

A glance at the list of symptoms and a brief consideration of the pathology of hay fever lead to the immediate conclusion that the chief indications are to check the discharge, allay the irritation that gives rise to the paroxysms of sneezing, reduce the turgescence of the nasal mucosa and relieve the stenosis. The only single remedy that meets these indications is Adrenalin as represented in Solution Adrenalin Chloride and Adrenalin Inhalant. By stimulating the vasomotor supply it contracts the arterioles, and thus promptly and efficiently relieves all the annoying symptoms referable to vasomotor paralysis. By its powerful astringent action upon the mucous membrane, which it blanches completely in a few moments, it controls symptoms referable to a catarrhal inflammation of that structure. Indeed the results that have been accomplished with Adrenalin in this field alone are really remarkable and of the utmost importance. Parke, Davis & Co., who market Solution Adrenalin Chloride and Adrenalin Inhalant, have prepared a very complete treatise on the topic, which contains more information than is to be found in the average text-book. They will cheerfully mail a copy of the booklet to any physician applying for it.

A Youthful Gonorrheic.

Dr. Nelson W. Wilson, of Buffalo, N. Y., reports an interesting case of gonorrhea in a boy of nine years. The patient was received at the hospital in considerable pain because of inability to urinate. The bladder was greatly distended and the patient said he had not urinated for about fourteen hours. Examination showed the penis edematous, swollen and phymotic, and the presence of a large quantity of suspicious looking pus, which showed the presence of gonococci. As the condition required immediate attention the phimosis was cut and a catheter inserted into the bladder. A large quantity of cloudy urine was withdrawn and the bladder washed with a permanganate solution, 1-8000. He was put on urotropin, .195, g. three times a day, catheterized every six hours and the permanganate solution was continued. During the next three days his temperature rose to the neighborhood of 105 deg. and he could not urinate voluntarily. On the fourth day he was put on uriseptin and urotropin discontinued. The next day he urinated voluntarily but with some pain. Treatment now consisted of washing the bladder with the permanganate solution every six hours, uriseptin internally and keeping the bowels open with salines. From the time that uriseptin was given the patient commenced to improve, urination became less and less painful and he made a rapid recovery, the gonococci disappearing in the sixth week of treatment. It is interesting to note that the child contracted the disease through sexual intercourse with a girl of twelve.

The Thirtieth Annual Session of the Mississippi Valley Medical Association will be held at Cincinnati, Ohio, October 11, 12, 13, 1904, under the presidency of Dr. Hugh T. Patrick, of Chicago. The headquarters and meeting places will be at the Grand Hotel.

The annual orations will be delivered by Dr. Wm. J. Mayo, of Rochester, Minn., in Surgery, and Dr. C. Travis Drennen, of Hot Springs, Ark., in Medicine.

Request for places upon the program, or information in regard to the meeting, can be had by addressing the Secretary, Dr. Henry Enos Tuley, Louisville, Ky., or the Assistant Secretary, Dr. S. C. Stanton, Masonic Temple, Chicago, Ill.

The usual railroad rates will be in effect.

Dr. William R. Pryor, Professor of Gynecology at the New York Polyclinic Hospital, has been appointed Attending Gynecologist to St. Vincent's Hospital.

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No. 3

WATER.

Some of Its Uses in the Treatment of Disease.

By Dr. T. E. Ross, Hattiesburg, Miss.

Some may think that the medical properties of water in the treatment of disease are too well known to the profession in general to make it the subject of a paper before a distinguished body of medical men, but having had considerable experience during the last four years in Hospital work, I have had it brought prominently before me, as to the great value of water in the treatment of the many ailments of which mankind is heir. It is not my intention to try to cover its field of usefulness entirely, for its scope is far reaching, but to touch upon its value to the general practitioner, in dealing with the disturbances most often met in every-day practice.

I am persuaded that very few physicians in our country value water as they should, that their observation along this line comes short, because of its very common use. I have often been able to palliate the symptoms of, and sometimes effect an actual cure, of many minor troubles, by the timely use of water alone.

In treating this subject, for convenience, I shall divide its uses into:

1st. "Water in health."

2nd. "Water in diseased conditions."

The first thought that arises is, What kind of water should be ordinarily used as drinking water? Of course men differ in their opinions on this subject, but to my mind, it is very plain that the common free stone water obtained throughout the southern portion of our state, is best for this purpose, unless it be rain water stored in well made cisterns.

The next question is, How much water should be taken into the system in a given length of time? Each individual is a law within himself in this regard, but as a rule, we drink too little water, though at times, we are prone to drink excessively and to our physical hurt as a consequence.

Water is the natural solvent of the body, should be taken at regular intervals of from three to four hours while awake, the quantity to be regulated by the individual. The laborer in the field and in the woods, require a great deal more water, as a rule, than the man who sits in the office at his desk, or the merchant in his store. It is the laborer or one who has violently exercised himself, who is liable to take an excessive amount of water, and it is the duty of every physician to warn his people against this indulgence. By the very liberal use of water, the man who labors physically, is able to obtain and maintain a higher standard of health, as a rule, than the man in the office is able to do. If those who

do not perform physical labor, would drink more liberally of water, they would have better health, and be able to do more work than they have formally done.

As stated before, water should be taken at regular intervals, and in such quantities as to keep the system flooded with the liquid. The writer has had a very satisfactory experience in increasing the quantity of water taken into the system in a given time. I have made it a practice for several years during the cold months, to drink from one to two glasses of cold water at each meal and to take as much as one glass about mid-way, when convenient. During the summer months, my family and I drink several glasses of ice cold water at our meals and continue to drink when an opportunity is offered between meals; as a consequence my children have materially improved in health, while I have gained in health and strength and my weight has increased several pounds. I have made it a point to impress upon my people, to increase the quantity of pure drinking water and as a result I find that they have less need for my service. Of course it is unnecessary for me to mention here that the drinking water should be carefully looked after, so as to prevent contamination from typhoid and other germs.

Something might also be said regarding baths in health. Some will tell us that to maintain the proper standard in health, one should take a bath every day, but this is not necessary as most of us know. Again, some will say that the best result is obtained from taking cold baths every morning, while others aver that they feel and do better from taking warm baths at any season of the year. I am inclined to think that some people will do better from the cold, and others from taking the hot baths, each being a law unto himself, and should be governed by the result of the bath rather than what others should tell him of their own experience.

By all means, we should as physicians, encourage the bath, if for no other good than that of cleanliness, for we are all acquainted with the old saying, "Cleanliness is next to godliness." If called upon by our patients to advise how often baths should be taken to maintain the highest standard of health, as a rule, our answer should be, not less than twice a week nor oftener than every other day.

2nd. "Water in diseased conditions:" Under this head, we may divide water into:

1st. Pure water.

2nd. Common Water.

3rd. Rain or snow water.

4th. Spring and mineral water.

The first and third divisions do not materially enter the realm of the physician, but belongs more properly to the pharmacist, who uses them for the proper exhibition of medicines and drugs when prescribed by the phy-

sician. We will therefore dismiss them without more ado, and proceed to the second and fourth divisions.

2nd. Common water.

By common water, I mean the ordinary water one meets with in every household in the land. Of course we sometimes find water in the home that might be classed mineral water, but it answers for our present purpose the same good that we can derive from common water. For medicinal use, I will now divide common water into hot and cold. It is sometimes a difficult problem for us to decide which is best to use, hot or cold water. As a rule, cold water and ice should be used in the initial or primary stages of diseased conditions, while hot water gives best results in secondary stages.

Cold Water.—After disposing of the cold bath in health, we come to the application of cold water in disease. We naturally find it more useful in inflammatory conditions of the different parts of the body and in that of high temperature in fevers, in which we use cold water for its antipyretic effect. As a rule, it is not necessary to use cold water as a bath when the temperature is less than 102½ to 103 degrees, but in temperatures higher than that mentioned, the application of water from the common air temperature down to the freezing point can be used; the temperature to be governed according to the results to be derived in the particular patient. Sometimes it is necessary, even in very high temperature, to begin with a tepid bath and gradually add the cold water until a very low degree of temperature has been produced, for some patients are very susceptible to the cold, especially when applied when the degree of temperature is very high, but with water gradually brought down from a still warmer temperature, you can bring them to the point of enduring with good benefits a bath whose temperature would be near that of ice cold water. The length of time in which a cold bath of the nature described is to be continued, must also be decided by the physician or nurse, as some patients require a longer time to produce given results than others. A close watch should be kept on them at all times during the bath, to note any ill effects it might produce; if a chattering of the teeth or a cyanosed condition of the skin occurs, the bath should be discontinued at once, the patient wrapped in a blanket and put to bed. As a rule, we can secure a reduction of temperature from 1 to 2½ degrees from a single bath properly given.

Inflammatory Diseases of the Eye.—In trauma of the eye, in which there is a laceration of any of the structures or a contused condition, in which there results considerable swelling and consequently pain, ice cold water or even crushed ice itself, applied in a rubber bladder or in any manner best suited to the occasion, will not only ease the pain of the part, but will prevent the inflammation from becoming as extensive as it other-

wise would, and the swelling can be almost entirely driven away by its continued use.

In inflammatory diseases of the internal structure of the eye, intense cold is sometimes of great value, and might be tried in almost any inflamed condition of the eye or its structures (except in idiopathic iritis), but, of course, in case there is no good results after a few hours' trial, it should be left off. In contusions about the eye, from blows, licks, etc., where we find a discoloration naturally following, if ice can be applied immediately very little discoloration will result.

Contusions and Sprains.—A contusion of any part of the body is always benefited by an early application of intense cold, and if kept in continuous use, will of itself effect an early cure. No liniments, or any thing else, unless you care to use simple massage, is needed, except the application of ice. The same obtains in regard to sprained joints, rupture of ligaments, etc. A sprained ankle or wrist is made more comfortable by an application of crushed ice than anything that can be applied, or that can be taken by the mouth; if applied early in these cases, very little swelling will occur and that will begin early to be reduced; if the joint is kept perfectly quiet and no motion allowed, no other treatment need be used to affect a rapid cure.

In orchitis, either simple or specific, the patient can be made more comfortable by an application of crushed ice, at the same time properly supporting the scrotum, than from any known remedy.

The application of cold water in chordee will at once dissipate the symptoms and permit the patient to rest quietly for a time, but of course it is not a cure, as it will no doubt return and have to be treated in the same manner again, for it is, as we know, only a symptom of other diseased conditions.

In painful priapism, due to any cause whatever, an application of ice or ice water will immediately give relief to the patient.

I have never been able to have a patient continue the application of ice to a felon on the finger, but believe that if they would, it would abort the disease and thereby save them a good deal of pain, and sometimes a disfigured finger. In these cases, cold in its intense form seems to increase the pain at the time and to such an extent that they would at once discard the plan of treatment.

In acute forms of rheumatism, where the disease manifests itself more in one particular joint than another, we sometimes find great relief to the patient by moderate applications of cold over the inflamed area. But in the more chronic forms, I have never observed any good to be derived from cold, better effects being obtained from the application of heat.

In inflammatory conditions of the brain structure, such as meningitis, etc., if an early diagnosis is made and cold water is at once applied to the head, and the proper remedies are used internally, we stand a good chance of saving the life of our patient. In an acute

ease of meningitis, cold should be applied as soon as the disease is diagnosed, and kept constantly to the head, until the acute stage is past, and in some cases I have kept ice cold water or even crushed ice itself under the head of the patient for many days or until the febrile symptoms had subsided to such an extent as to not require the use so constantly, but if left off, and the symptoms should begin to recur, would at once replace the ice-cap and continue it until favorable results were again obtained. I firmly believe that the reason why we are now able to save quite a large per cent. of our meningioma patients is because we are able to diagnose the disease in its early stage and have learned the great value of the use of intense cold.

In inflammatory conditions of the abdomen, following surgical operations, some physicians use poultices of crushed ice, and report excellent results therefrom, but I am compelled to state that so far as my experience goes, I have never had such good results following cases that have come under my observation.

The most that I have obtained from ice on the abdomen was in cases of hemorrhage, due to typhoid infection. In a particular case that I have in mind, where a young man was suffering from typhoid fever, hemorrhage made its appearance about the fourteenth day, and continued to flow at intervals for several days; some times the quantity lost at a given time was enough to almost exsanguinate him, and although I used many remedies commonly used in such cases, I gained no permanent results until I placed a bladder of ice over the ileocaecal region, also one over the lumbar region beneath, and kept them there for hours; after which time no hemorrhage recurred. I also secured considerable reduction in temperature at the same time.

Under the head of typhoid fever, will state that I have secured first class results, so far as reduction of temperature was concerned, by the use of water injected through a rectal tube, as high up the bowel as possible to pass the tube. My opinion is that in cases where the skin is cold but internal temperature running high, that more good can be accomplished by the use of ice water, by means of the rectal tube, than any other manner, so far as temperature is concerned. In typhoid fever water should be ingested in large quantities, if the patient can possibly retain it, so as to keep the tissues perfectly saturated, and in this way the mouth, tongue and fauces will be kept in a moist condition. With moderate temperature, the tepid bath is best, but with high temperature, together with hot skin, the cold bath is best and the safest antipyretic. As stated above, ice cold enemata can be used in this manner to reduce temperature, when it would be useless and dangerous to apply cold water to the skin.

An ice bag placed directly over the bladder, in acute cystitis, proves to be of great comfort to the patient. Of course this is not a cure, but it is necessary that we should do little things that will add to the comfort of our patients, even though they are not direct-

ly curative, while we are following the regular plan of treatment by the mouth.

Hot Water.—Neuralgia of the face and head are always relieved by the application of hot water, either directly or by means of steaming or hot water bags, and in this way make our patient comfortable until other remedies can effect a cure. I have found that people who suffer from so-called sick headaches may be considerably relieved and tide over the time very comfortably if water, as hot as possibly be borne on the skin, be applied directly to the forehead or to any part of the head. For good results, it is necessary to begin with moderate heat and increase the temperature gradually until the cloths are so hot that the person applying them cannot hold them in their hands; changing them often and continuing for at least a half hour. I have several patients who have found this to be the most grateful remedy that they have ever tried, and now always abort the attack by adopting the hot water treatment as soon as they feel the symptoms coming on.

In the chronic forms of articular rheumatism, we also find great relief in hot pack. In intestinal colic, I do not think anything does more good than hot water applied over the entire abdomen, as hot as can be borne (except, of course, it should be a hyperdermie of morphine).

The same obtains in the passage of biliary calculi, when it is necessary to keep hot moist applications at regular intervals of two or three hours for a half hour at the time, over the liver and gall duct, for its greatly relieving effects assists very much any other remedies we may use in connection with the water.

The same obtains in the passage of renal calculi, only the application should be constant in these cases, for, as a rule, the pain in time to prepare the bath.

In diseases of the bladder, as in acute cystitis, nothing gives relief like an injection of warm water into the bladder, which may be charged with medicinal remedies, if we wish, but, as a rule, all that is needed is that the water should be sterile. I do not think that we effect a permanent cure of chronic cystitis unless it be done by the use of warm injections of water into the bladder at regular intervals of about every two or three days, which, with the assistance of a good diuretic mineral water, will do nearly all that is possible to do for those cases. It is unnecessary to dwell upon the good that we may do by the use of hot and cold enemata into the bowel; it is instant relief in ordinary forms of constipation, and in many respects almost as valuable is diarrhea, when the disease manifests itself as a proctitis or colitis. The warm douche is the staunch friend of the gynaecologist, and there is scarcely a disease of the vagina or uterus in which this valuable ally is not called upon to do a noble part in effecting cures.

In acute cellulitis of the pelvic cavity, where there is a tendency to the formation of inflamed areas, sometimes the symptoms will be completely dissipated by the use of large

quantities of hot water directed against the inflamed locality, through the vagina, once every day. Dr. Sexton, of New Orleans, informs me that in this manner, he has aborted many cases of this kind, and stated that he has used as high as ten gallons at one sitting.

Prof. Wyeth, of New York, stated before the Polyclinic in 1902, that he had been unable to cure warts, naevus, moles, boils and such like growths by the introduction of boiling water hyperdermally into the center of the growth at its base. I have followed his idea in several instances, and have found it to work like a charm. The boiling water seems to coagulate the blood and other fluids in the immediate vicinity, thereby cutting off the nutrition of the part; it therefore rapidly shrivels up and in a few days sheds off, leaving a clean, healthy surface, which soon heals over and scarcely leaves a sign of the site of the former growth.

I also saw a case of sarcoma treated by Dr. Wyeth by boiling water. It was in the case of a man who had received an injury, and in consequence of which his arm had been amputated at the upper third of the humerus; later a sarcoma developed, which gradually encroached upon the shoulder, until all signs of the arm had been destroyed. He had kept the man alive for two years, by the use of boiling water; at stated intervals of about two months he would return to the hospital to have his shoulder boiled. This was done by walling in the diseased surface with plaster, and pouring the boiling water from the pitcher directly into the open diseased surface. This seemed to cause the patient very little pain at the time, and he stated that it always gave him relief from pain for many days afterward. Every now and then the artery, first the brachial, later the sub-clavian, would break loose and would have a severe hemorrhage. On the first sign of this hemorrhage he would immediately report to the hospital, when the hemorrhage would be stopped by the use of the boiling water. Dr. Wyeth stated that he did not hope to cure the man, but felt positive that he had, by this means, given him fully two years of life, and he thought it possible that an early use of boiling water in such cases might possibly cure the disease.

Without the use of sterilized water, the modern surgeon would be greatly handicapped. Prof. Lister revolutionized surgery by his germicidal methods, but the modern surgeon goes a step further and presumes to prevent complications following surgical interferences by thorough sterilization of the proposed field of operation, the hands of the surgeon, his assistant and the instruments used, so as to prevent the introduction of deadly germs, during the operation, rather than try to destroy germs after they have gained an entrance. Sterile water, therefore, to the surgeon is of the utmost importance, and always proves its friendship when properly used.

Lavage of the stomach has gotten to be quite common, in late years, with the regular practitioner, and great good may be accom-

plished by this means in certain forms of indigestion, ulcer of the stomach, and where the juices of the stomach seem to be powerless to cope with the simplest forms of food, which we may introduce. To introduce moderately warm water, with or without boracic acid or similar remedies, always gives us assistance in treating this class of disease.

In artificially fed infants, whose powers of digestion are weakened, lavage of the stomach is of great benefit and will help us to tide over many a weak little tot through the hot periods of the summer, who would otherwise miserably perish if this means should not have been used.

A glass of hot water taken before breakfast seems to be of great service to the individual suffering from poor digestion; it also seems to have some laxative effect. Large quantities of hot water taken into the stomach will often cause profuse perspiration, and in this way is sometimes of great relief. Tepid water will often cause vomiting, and is a common remedy among the negroes in my section as an emetic.

Mineral Water.—This class of water is very much in vogue just now in the treatment of many diseased conditions; in fact, it seems to be the fashion, no matter the cause, to go to one of the many noted springs, as a cure for the disease. In the piny woods section of this State there are several noted springs, which are of great value in the treatment of nephritic troubles especially.

Most of us know the value of Stafford's Springs mineral water (there are others also, near the city of Hattiesburg, noted for their medicinal properties); it is not only of great service in kidney troubles, but seems also to exert a powerful influence over the digestive organs, and only emphasizes the fact which I stated on the outset, that, as a rule, we drink too little water, for when we go to the springs, we start out with the intention of drinking all that our stomachs will hold, and to continue to do so as long as we remain. I am fully persuaded that if one would adopt the same plan at home in drinking our ordinary water that we would in a great measure secure the same results.

Intra-Tracheal Injections in the Treatment of Pulmonary Tuberculosis.*

By W. W. Mangum, A. M., M. D., Enfaula, Ala.

Mr. President and Gentlemen:

Since the very earliest history of our profession, among the many puzzling conditions which medical men have been called upon to alleviate and remove, there has been one disease which has ever been our stumbling block; one disease, the ravages of which has made great gaps in the population of every country under heaven; one disease against which the batteries of organized medicine have been turned for centuries, almost without avail; one disease which, in its later stages, still re-

*Read before the recent meeting of the Alabama State Medical Association.

mains in the list of incurables. The large number of papers treating of this disease upon the programme of every meeting of physicians where diseases and remedies are to be discussed, shows the universal interest with which it is invested, and the tireless efforts made by our profession to find a remedy; and it is for the purpose of presenting a new method of combating this dread condition, with a report of results obtained, that I am here before you. I refer to pulmonary tuberculosis.

In a retrospective glance at the history of this disease, we see doctrine following doctrine, in endless succession, as waves succeed waves upon the ocean, or as the foliage of autumn falls, to be succeeded by the leaves of spring. One theory appears upon the stage, from Paris, where there are still others under treatment. I have not grouped them according to the stage of the disease, but have only culminates for a while in meridian splendor, and then sinks down into obscurity with all that have gone before. But happily for the cause of humanity, and for the advancement of science, exploded doctrines, falling, fertilize the field of research, and render future harvests more luxuriant. If I had the time today for a proper presentation of this matter, I would like to go into the history of these theories in detail; it would make an interesting discussion. Suffice it to say, however, that since the adoption of the theory that the disease is dependent upon the presence in the system of a special micro-organism, the efforts of physicians have been mainly directed towards the discovery of an efficient parasiticide, which might be administered either by inhalation or by its introduction into the blood.

Both of these methods have been exhaustively discussed for years. Various derivatives of various germicides have been experimented with, each having many adherents, and still there seems to be "no balm in Gilead." All of these remedies are quickly destructive to bacteria outside the body, but a difficulty in the way of inhalation is in getting a sufficient quantity of either an impalpable powder, or a vapor, or a gas, in reach of the colonies of bacilli, without doing injury to the tissues or inducing toxæmia. As regards the introduction of parasiticides into the blood, it seems hardly probable that a toxic agent can be safely administered in sufficient quantity to effect the object. At least so far it has not been done, and it remains to be determined by clinical experience whether these difficulties are insuperable. In the meantime what other method is left to us? It is universally conceded that whatever remedy may be successfully used must be locally applied. How may this be done?

A good many years ago Brainerd, of Chicago, experimented largely with the injection of tuberculous cavities, through an opening in the chest wall, hoping by this means to arrest the disease by the germicidal action of the solution injected. It was unavailing, however, because of the fact that the cavities

were walled off to themselves, and the medication used went no further than these walls.

So, then, the inhalation method, the introduction of a parasiticide into the blood, and the injection of cavities through an opening in the chest wall, having after exhaustive experimentation failed to succeed, there can be only one other means by which the diseased surface may be reached, and I am here today to report results obtained from the use of this method. I refer to intra-tracheal injection.

I was induced to make my first experiment with this treatment by a little paragraph in Nothnagel's Practice, in the volume on Diseases of the Bronchi, Pleura and Lungs, in which it is said that "in the treatment of pulmonary conditions, the injection of drugs directly through the glottis into the trachea deserves to be more generally used."

In studying the question as to the practicability of this method of applying drugs locally to the diseased surface, I searched diligently through all literature available, in the attempt to find if the treatment had ever been used, but could locate no such report. Occasional references were found in which it was discussed as a theory, but no instance of its actual use. My interest in the matter became more absorbing as I considered its advantages, and I finally obtained my consent to risk what might seem a dangerous procedure. The first attempt being successful, I adopted it as a routine practice in all of my tuberculous cases, and have in each instance had my belief in its practical utility verified.

The drug I have used is ichthyol. This is, as all of you know, a natural product, obtained by dry distillation from a bituminous mineral found in the Tyrol, containing a large percentage of sulphur. It is a powerful vaso-motor constrictor, on mucous surfaces, thereby causing a rapid disappearance of hyperemia, and of the pain of congestion. It can penetrate the unbroken skin, showing its great diffusibility. It promotes such metabolism as sulphur is concerned with. It is a decided antiseptic, being quickly fatal to all pathogenic organisms. With a knowledge of these facts in mind, I determined to experiment along the line suggested above, and remarkable indeed have been the results. The ichthyol was applied mixed with cod liver oil, in the proportion of five per cent.; the quantity to be injected being combined as the treatment was administered.

The technique of this little operation is identical with the method by which intubation is performed, though there is of course not by any means so great a difficulty in manipulating through a normal larynx, even on the most delicate subject, as in cases where diphtheritic deposits, or croupous spasms, have almost entirely closed the chink of the glottis. Indeed, I might say there is no difficulty whatever, provided a knowledge of the anatomy of the larynx is borne in mind, and the reduplications of the mucous lining upon either side of the vocal cords are not mistaken for the glottis itself.

The instrument used is one I have had made for me by Betz, of Chicago, consisting of an ordinary hard rubber piston syringe, with the nozzle curved into a beak. With the mouth gag in place, the index finger of the left hand is introduced, the epiglottis is lifted out of the way, and the nozzle is passed on this finger as a guide directly down through the glottis, until the tip is below the cords and well within the trachea. One drachm of the mixture described above is immediately injected, the patient being directed to take a deep inhalation as the syringe is withdrawn, so that no portion of the oil is brought up into the larynx, where it would of course at once excite a violent spasm of coughing. This procedure must be accomplished whilst the patient is holding the breath, and usually requires, after some experience, from thirty seconds to one minute. The object in the inhalation as the syringe is withdrawn is that the oil may be forced, by the influx of air, deep down below the bifurcation of the bronchi, where, by its adhesiveness, it is spread along the mucous membrane of the tubes, giving free ingress and egress to the air, and interfering in no way, as a watery solution would, with respiration. Usually a few bubbling rales are all that can be heard to indicate the presence of fluid in the chest, and these rapidly disappear as the oil is absorbed.

The introduction of the syringe point is of course at first objectionable and disagreeable to the patient, just as the introduction of a lavage tube into the stomach is disagreeable; but after a few treatments tolerance is established, and as in lavage, they soon learn to take it with no discomfort.

In the beginning the injections are administered daily, the intervals being gradually increased as the patient improves. In the cases which I have here to report, the average time in which daily injections were required is four weeks. A more protracted treatment being of course necessary in the far advanced, and a shorter time in the milder cases. Some of these cases were in my own practice, the others being in the practice of several professional brethren who kindly assisted me in these experiments, and in accumulating these statistics. Four are reported arranged them in the order in which this treatment was begun.

I will read here two of these reports in detail, as samples from the number which have been sent to me. These will show very nicely the prompt relief obtained from certain symptoms, and the steady improvement in all.

White female, age 28 years, excessive cough, profuse expectoration, great emaciation, absence of menses. Duration of the disease two and a half years. Microscopic examination of sputum showed tubercle bacilli in large numbers. Weight 87 pounds. This treatment was begun June 20th, 1903. At that time the morning temperature was normal, respiration 28, pulse 104; afternoon temperature 101, respiration 36, pulse 120. Injections were administered daily. June 27th, one week from beginning of treatment, cough much better,

less expectoration, morning temperature normal, respiration 22, pulse 95; afternoon temperature 100, respiration 30, pulse 110. July 4th, two weeks, only coughs badly at night after lying down; very little expectoration; weight 89 pounds; night sweats disappeared; afternoon temperature 99 1-5, respiration 20, pulse 80. July 18th, four weeks, weight 95 pounds; cough entirely relieved; afternoon temperature, respiration and pulse normal; good appetite and gaining strength rapidly. August 1st, six weeks, weight 100. August 29th, ten weeks, weight 110; feels perfectly well; microscope, in small amount of sputum she succeeded in raising, showing no tubercle bacilli. September 26th, fourteen weeks, weight 112 pounds; patient looking strong and well, and making her living as a seamstress. Reported from El Paso, Texas.

The other sample case I have selected is that of a lady of refinement and intelligence, 48 years of age, who had been suffering from the disease for two years. Previous to the beginning of this treatment every other remedy in reach had been tried. She had been sent one winter to South Florida, and the next to New Mexico; the disease steadily progressing all the while. The intra-tracheal injections were begun July 5th. Her weight was then 90 pounds, and she seemed to be slowly but surely losing ground. Some difficulty was at first experienced in giving the treatment because of the paroxysms of coughing which followed the attempt to introduce the nozzle into the trachea. However this was largely overcome after a few efforts, and the relief obtained after one week's treatment was most remarkable and unexpected. After three weeks she was awakened only once or twice during the night by coughing spells. After the fourth week there was a complete cessation of the cough at night; feeling very much better than at any time during the two years of her illness; taking considerable exercise; fever all gone; appetite good. After eighth week, continued improvement; cough entirely gone. At the present time, four months from the beginning of the injections, she weighs 119 pounds, takes any kind and quantity of exercise she likes, and has no further need of a physician. Reported from Las Vegas, N. M.

Case seven, which is reported as greatly improved, discontinued the treatment because of a change of homes, and would no doubt have been entirely free from the disease in a few more weeks, as the gain of fourteen pounds would indicate.

Case eight, which is reported as in an unsatisfactory condition after sixteen weeks' treatment, was a third stage case, in which there were extensive cavities in both lungs, and was forty years of age.

Case twelve, which is recorded as a failure, was also a third stage case, of two years duration, and had been bedridden for some months before treatment was begun.

Cases fourteen and fifteen, reported as improved, were brother and sister, and discontinued the treatment because the brother took

employment, and could not go with his sister to the office of their physician. One gained fourteen and the other nineteen pounds, and both considered themselves as entirely relieved, though the doctor who treated them was not willing to pronounce them as cured. Of the twenty-one cases, fifteen, or seventy-five percent., are reported as cured; nineteen, or about ninety-five percent., are reported as either cured or improved.

submit any manuscript for publication previous to this, because of my desire to discuss the matter before this Association, and because I preferred to have a more convincing accumulation of case reports. In one of the recent issues of the Journal of the American Medical Association, I notice that a Dr. Anderson, of Ann Harbor, Mich., is experimenting with these injections on dogs, and has expressed his intention of adopting them in his

CONDITION AT BEGINNING OF TREATMENT.

CONDITION AT CLOSE OF TREATMENT.

Case	Durat'n of Disease	Aft. Temp.	Expecto.	Wght	Tr'tm't Began.	Treatment Continued.	Temp'ture	Cough	Gained Weight	Final Result,
1-37 yrs. Negro; Male	19 months	101 2.5	Profuse	127	June 11	12 weeks	Normal	Absent	34 pounds	Cured
2-28 yrs. White; Female	2½ years	101	Profuse	87	" 20	14 "	"	"	27 "	"
3-32 yrs. Negro; Male	6 months	99 4.5	Scanty	134	July 3d	9 "	"	"	18 "	"
4-19 yrs. Negro; Male	14 months	102 2.5	Profuse	122	" 12	15 "	"	"	22 "	"
5-46 yrs. White; Female	3 years	100 3.5	Profuse	90	" 14	18 "	"	"	29 "	"
6-17 yrs. White; Male	1 year	99 3.5	Scanty	129	" 19	15 "	"	"	16 "	"
7-34 yrs. Negro; Male	2 years	102 1.5	Profuse	116	Aug. 15	18 "	99	"	14 "	great improv'm't
8-40 yrs. Negro; Male	18 months	101 4.5	Profuse	110	Oct. 2d	16 "	100 3.5	much improv't	9 "	unsatisfactory
9-28 yrs. White; Female	12 months	99 2.5	Free	100	Nov. 6	12 "	Normal	absent	19 "	cured
10-30 yrs. White; Male	8 months	99 3.5	Free	127	" 11	13 "	"	"	21 "	"
11-36 yrs. White; Male	12 months	100 2.5	Profuse	130	" 11	11 "	"	"	21 "	"
12-21 yrs. White; Male	2 years	102 2.5	Profuse	112	" 11	16 "	101 3.5	excessive	0 "	failure
13-24 yrs. White; Male	8 months	99 4.5	Free	120	" 24	12 "	Normal	absent	38 "	cured
14-29 yrs. White; Female	12 months	100 2.5	Free	98	" 24	14 "	"	slight	14 "	improved
15-42 yrs. Negro; Male	18 months	101	Profuse	137	" 24	18 "	"	"	19 "	"
16-23 yrs. White; Female	9 months	99 3.5	Scanty	96	" 29	12 "	"	absent	20 "	cured
17-24 yrs. White; Male	12 months	100 1.5	Scanty	143	Dec. 2d	14 "	"	"	13 "	"
18-37 yrs. White; Male	12 months	101	Free	131	" 2d	16 "	"	"	33 "	"
19-20 yrs. White; Male	18 months	101 3.5	Profuse	125	" 2d	16 "	"	"	24 "	"
20-49 yrs. White; Male	18 months	103	Profuse	136	" 2d	18 "	"	slight	20 "	much improved
21-31 yrs. White; Male	8 months	99 2.5	Scanty	146	" 12	16 "	"	Absent	36 "	cured

I desire to call attention here to the fact that these cases were all carefully diagnosed by physical signs, family history and the use of the microscope. Some few, seven, I believe, had the tuberculin test. In each case reported as cured, the physical signs and the microscope showed the patient free from all evidence of the disease, and they were kept under observation, particularly as to temperature and cough, for four weeks after being discharged. It is now six months since the first cases were discharged, and there has been no recurrence in any so far as I have been able to discover. There are still a number of cases under treatment, which will be reported during the summer, and I hope by September, when I expect to attend the International Congress at Paris, to have in hand probably an hundred reports.

I have addressed a number of medical societies in different cities on this subject, during the last few months, but have refused to

practice. Dr. Francis Elebaeh, of Paris, writes me that his success in the four cases treated for me has induced himself and his associate to administer the injections promptly in all incipient cases which come to their sanatorium, and that they have so far met with uniform success. In this connection I will say that I have experienced no difficulty in arousing the interest and obtaining the co-operation of my professional brethren in these experiments, except in my own State. I take it but as an illustration of the fact that "a prophet is not without honor save in his own country;" and though I have no wish to attempt to pose as a prophet, still I am assured that there is much good in this method of treating consumption, and that it deserves a trial by every member of this Association, who has such cases to treat, on account of its simplicity, if for no other reason.

We are too much attracted, anyway, by the charm of fine spun German theories, evolved

out of the brain of some impractical chemist; and we satisfy ourselves, even though our patients die, with the questionable consolation that we have at least handled the case in a scientific manner. The regular rise and fall of these chimeras, which we so eagerly grasp even when in the stage of raw empiricism, should teach us that, in all probability, many a tapering monument marks the last resting place of some of the victims of these German illusions. Let us rather work our way with the simpler instruments, with which we are familiar, and not attempt to daub with untempered mortar.

Practically, the good in this treatment has been clearly demonstrated by its results in these cases reported; and results are the "*sine qua non*" of the adoption of any new treatment.

Theoretically, we have but to bear in mind some of the medical properties which I have mentioned as being characteristic of ichthyol to be convinced of its usefulness when locally applied to an ulcerated surface. I have said that it is a powerful vaso-motor constrictor when applied to mucous surfaces, thereby relieving hyperemia. A hyperemic condition of the mucous lining of the air passages is one of the concomitants of all coughs; hence the promptness with which this distressing symptom was relieved in these cases. I have said that it was a decided antiseptic, being quickly fatal to all pathogenic organisms. Thus is the rapid disappearance of the tubercle bacilli from the specimens examined accounted for. But as these tubercle bacilli are widely scattered throughout the lung substance, how does it happen that so small a quantity of the drug can come in touch with these remote infections? I have said that it can penetrate the unbroken skin, and be eliminated by the kidneys, showing its great diffusibility. It is easily understood then how much more rapidly and thoroughly it can be taken up through a hyperemic mucous membrane, and reach, both by continuity of tissues and by endosmosis, to the uttermost portion of the lung.

With reference to the use of pure cod liver oil, there was no other purpose intended than that of a bland, unirritating menstruum, for the dilution of the ichthyol; and cod liver oil was chosen because it can be obtained pure. An oil was preferred to a watery vehicle because of its consistency and adhesiveness; making it possible, by being disseminated along the walls of the bronchi, for respiration to go on unimpeded, while it is being absorbed.

In discussing this matter, a number of physicians have asked me how it was possible to inject a drachm of anything into the trachea without strangling the patient. It is only in the larynx that this difficulty exists; because of its more intricate nerve supply, and its intolerance to the presence of any foreign body. With the glottis safely passed, this quantity is dumped into a cartilaginous tube that, especially in this disease, is accustomed to

the presence of large quantities of mucus; and if care is taken that none is regurgitated into the larynx, there is never the slightest trouble.

I might say here by way of parenthesis, that all pulmonary conditions, where there is an irritation of the mucous membrane to be soothed, or an arterial congestion to be overcome, are equally benefitted by this procedure. Pneumonia, bronchitis, asthma and such conditions, can be promptly relieved by the use of this procedure; various substances being injected as the case may require. I have found in my experience that one or two applications of the ichthyol oil will promptly relieve an attack of acute bronchial irritation in the larger tubes.

Now, gentlemen, I have given you the theory, and the results of its practical application, and I sincerely trust that all of you, who may find an opportunity, will give these injections a trial. The method is extremely simple, and the instrument very inexpensive. The only requirements are a little self-confidence, and a knowledge of the anatomy of the larynx. I have put myself to the trouble and expense of discussing this matter in various cities lately, purely because I am convinced of its great usefulness, and because of my desire to do all in my power to aid suffering humanity. I have no sanatorium to advertise, nor appliance to sell. I am simply a private in the ranks, fighting in the cause of humanity against this dread monster, consumption, which hiding itself in the unreachable portions of the body, saps its strength, and destroys its vital functions, like a horrible vampire sucking the blood of a sleeping victim. Let us throw away our long distance firearms, fix bayonets to our guns, and fight this thing at close quarters. Let us resort to every subterfuge, and utilize every available weapon, to remove the stigma of defeat which has hung over us so long in our warfare with this disease.

An Open Letter to H. S. Gulley, M. D.*

By B. F. Duke, M. D., Pascagoula, Miss.

In your letter requesting that I lend you a hand in the way of a contribution to your section, it was stated that this branch of our work had been neglected.

It was a matter to which I had given but little attention, and after having consented to do the best I could for you, I began to look about me for some data upon which to rest whatever contribution I might undertake to render in compliance with my promise.

First of all, I consulted the transactions of the Mississippi State Medical Association, in order to ascertain what had been done by that body, since the date of my initiation, at its annual meeting in your city (Meridian) for the year 1883.

This beginning of "judgment at Jerusalem" did not prove altogether flattering to

*Read before the Mississippi State Medical Association, Section of Dermatology, April 22, 1904.

her pretentious history; for, to my astonishment, I found an entire blank until 1894, when a paper on the location of acne, as an indication to treatment, was read by Isadore Dyer, M. D., of New Orleans, La.

In 1895 a paper was read by J. H. Blanks, Jr., M. D., of Meridian, entitled "A Plea for More Thorough Investigation of Dermatology," and another paper on "Dermatology" by Dr. Dyer. The next showing was an interesting little paper by H. N. Street, M. D., of Gloster, Miss., in 1898, detailing an aggravated case of dermatitis herpetiformis. This constitutes about all that has been done by the Association during the last two decades. These statements, however, may not be strictly correct, as the transactions for three or four of these years are not now at my command; but enough is seen from this resume to demonstrate the truth of the statement referred to your letter.

I have examined several hundred medical journals, embracing fifteen or twenty different publications, and find about the same ratio there.

The Journal of the American Medical Association for 1903 contains 4,114 articles, papers and paragraphs; 283 of these refer in some manner to tuberculosis, 156 to cancer, 135 to typhoid fever, 60 to pneumonia, 58 to rheumatism, and 32 to skin diseases, exclusive of the exanthemata and cancer, and inclusive of lupus and epithelioma—a little less than one per cent. being devoted to the legion of cutaneous affections.

When I arrived at this point in my researches I felt a special curiosity to know what were the contents of Dr. Blanks' "Plea," as I had read only the title. Accordingly, I returned to the meeting of 1895, and after having given the paper a careful reading, I am prepared to endorse every word of it. This paper is worthy the widest possible reading, both for the simple truth of the exhortation and for the patriotic and unselfish spirit of the entire argument. Certainly there should be a waking up along this line, and I appreciate the effort you are making to bring your section to the standing which its importance demands. Dr. Blanks says dermatology is often referred to as a dry subject. He might have retorted, "So is anything else of which we are ignorant," especially that which presents so much of complication and difficulty of study as do the multifarious diseases of the human integument, whether organic or symptomatic. It would mean imperishable fame, and a gold mine thrown in, to be able at all times to discriminate between these two forms or manifestations of skin pathology, as it would insure intelligent and successful treatment instead of guess-work and quackery and failure, as suggested by Dr. Blanks.

Of course, it is not expected that every physician shall be an expert in dermatology, as that would involve more time and means than the average practitioner could spare from his general business; yet surely it is not too much to expect that at least one or two well-studied volumes on this subject should be in

every doctor's library. It is safe to say that this alone would increase the present intelligence of the profession a hundred per cent. Many might go even much farther. Why can not some of our ambitious and wealthy young Mississippians boldly enter the broad unexplored territory of dermatology, and with the armament of chemistry, the microscope and spade, go down like Dr. Stiles, the hook-worm hero, after germs and immortality?

I notice you have me on the programme for the report of a case. Unfortunately (or rather, fortunately), I have no case worthy a place in our literature, and not being willing to disappoint you entirely, besides having a keen personal interest in the subject, I have chosen rather to address you this short open letter, with the hope that no harm will grow out of its simple reading before the Association.

I should have been glad to do better for you, your section and the Association, but in the absence of any practical or scientific information which would be of value, I have taken this course as the only one open to me at this time. You will understand that this is not in the nature of a complaint, nor is it intended as an arraignment of the medical profession, but a fraternal reminder of what appears to be a serious neglect of a most important branch of our sacred calling.

I have greatly desired to attend the meeting, but situated as I am, it may be impracticable for me to do so. With greetings and good-will to all, and best wishes for yourself, I remain as ever, your friend.

Fresh Air and Physical Discipline in the Treatment of Pulmonary Tuberculosis.*

By C. H. Tebault, Jr., B. S., M. D., Late Surgeon Officers' Hospital, Santiago, Cuba; Ex. Interne Touro Infirmary, New Orleans; Ex. Interne Charity Hospital, New Orleans.

In these progressive days of medical research, when so much study is given to the etiology of disease, and in consequence so many new theories and treatments are advanced, I fear, in regard especially to pulmonary tuberculosis, there has been a neglect in those cruder yet more essential measures of fresh air and physical discipline, particularly in the initial stages of the disease. The vast benefits of healthy exercise and regularity of habits, with a life spent as much as possible in the open air, were early impressed upon me while I was an under-graduate in medicine.

As a first year student, I was following the demonstrator of physical diagnosis at the Charity Hospital, of this city, when a man was placed before the class for examination. He was a negro, about 32 years of age, and represented a typical case of tuberculosis, with cavities in both lungs. He gave the usual classical symptoms of the disease, and the usual prognosis of his case was made. He heard the demonstrator announce to the class that death would take him before the year

*Read before the Louisiana State Medical Association, May 10, 1904.

ended. He became frightened, and did not tarry long in the hospital.

A month after his disappearance from the ward, he became embroiled in a difficulty with another negro. He killed his adversary. After a speedy trial, he was convicted of manslaughter and sentenced to the Louisiana penitentiary for ten years.

An interim of four years ensued. I had the surgical service as interne, under Prof. Matas, in the Charity Hospital. Late one evening the ambulance brought in a wounded negro, and he was placed in my ward. He was suffering from a gun-shot wound of the abdomen, with peritonitis well advanced, and being in articulo mortis, no attempt was made to do more than relieve his pain. He being perfectly conscious, recognized with this greeting: "Don't you know me, doctor? I am the man with the consumption. The old doctor said I was not going to live the year out—that's four years ago. I was in ward 34." Naturally I became very much interested, and made him give me a history of his career since I saw him last. In spite of the pinched expression of approaching dissolution, he looked anything but like a consumptive. He was muscular; his chest was full, and his body well nourished. He said he was sent to work in North Louisiana on a plantation, and was up early every morning at the same hour; was fed on good, substantial food, and very seldom ever got a drink of whiskey. He was too weak at first for any hard physical labor, so he was made to drive a mule team for a while. He was subsequently placed at the plough, and made to do all kinds of hard work, until he became thoroughly habituated to it. At first he was very short winded, and "most killed," as he expressed it, but after two years was able to keep up with the other convicts.

In an attempt to escape, he was shot twice in the abdomen by one of the guards, and was brought to the hospital twelve hours after the shooting. The negro died next day. As I had charge of the pathological department, I held the autopsy for the coroner. The lungs proved the accuracy of the diagnosis made four years before. Three large cavities, one filled with a well isolated, hard cheesy mass which contained no tubercle bacilli, stood as landmarks to what were once three fair-sized cavities. There were several smaller nodules scattered over the lung area, but microscopic examination disclosed no signs of the bacilli.

This was an undoubted case of recovery from pulmonary tuberculosis, without medicine, without the air of the celebrated health resorts, but under surroundings which one would deem most unfavorable.

Of course, I am not advocating the Louisiana penitentiary as a curative haven for consumptives, but what impressed itself upon me so forcibly is the wonderful resources of nature if aided by proper discipline, food and exercise in the open air, where a free and vigorous ventilation of the pulmonary air cells can supply the impoverished blood current

with life-giving oxygen to burn up broken down material, and spur the lethargic emunctories to their proper functions of excretion. Then comes the ability to digest, assimilate and rebuild. Here was a man who was under compulsion to perform certain routine duties in the open air; denied the excesses of dissipation; placed on a routine substantial diet; made to arise early, and retire at nightfall in a condition to enjoy a refreshing sleep, "tired nature's sweet restorer."

When in practice, a consumptive appears for treatment, I always bear uppermost in mind the necessity for pulmonary ventilation in the way of lung packing. That is expanding the lungs to their greatest capacity frequently and at regular intervals during the day, always in the open air. I find that by inhaling deeply through the mouth, and exhaling through the nose during this process, that the lung pressure is not released so suddenly and the danger of capillary hemorrhage avoided. If any one tries this procedure regularly, it would be surprising to find how much the lung capacity is increased.

Of course, we know that the open air treatment is nothing new in the management of consumption, and that colonies of tenters are scattered over different favorable climatic parts of this country, Mexico, Colorado, California, North Carolina and, especially of late, Arizona. The great difficulty is that the treatment to a great extent ends in the mere residence in tent life. There is no discipline, no routine. The patient basks in the sun, reading a novel, or takes irregular walks or rides, according to his own sweet will. Clock-time routine, day after day, week after week, is disregarded except it be to administer medicines of the cod liver oil, creosote kind. There is no regular diet, but the patient is advised to eat freely. This rather vague advice is frequently lost upon a consumptive.

I find that even in New Orleans, with its marshy surroundings and variable temperature I have succeeded beyond my expectations in the treatment of a few cases who have put themselves unreservedly under my discipline. We all know how hard a consumptive is to manage. He may feel buoyant today and depressed tomorrow, and if left to his discretion, will regulate his life according to his feelings. We have heard of the drowsy sloth that comes over the traveler lost in the snow. If he yields to his impulse, he will lie down upon his soft white couch which quickly saps his life away while he sleeps. So with the lethargy of the consumptive. Disease is progressing while the excretories dull themselves with rest.

In order to secure proper results, each day must be utilized in the same methodical manner, very much as the time of a child attending school. There's no royal road either to health or education, but the monotonous laws of Nature must be respected and obeyed. Slowly and imperceptibly tissues and cells are destroyed and repaired and upon the equilibrium of these metamorphoses does health, even life depend. The forces which accomplish these changes are vitally important to the con-

sumptive especially. His physical existence must be toned to the utmost by natural means first, and Nature's allies in the way of medicines, etc., may come in as timely reinforcements.

I find it of great importance to give the patient a tabulated system for daily obedience in regard to hours for arising and retiring; baths, walks, lung packing and diet. By toning up the appetite so that eggs, preferably raw, milk, oat meal, broths, etc., may be readily assimilated, the nauseous cod liver oil may be dispensed with. The bowels are brought under obedience so that they act at the same hour each day. Body massage is a useful accessory to the patient, and he is taught to be his own Masseur and thus gain physical exercise at the same time.

Of course in a paper of this kind, a mere outline can only be given which one's judgment may easily fill in.

The patient reports regularly as to any infraction of the orders given him, and thus feels that he is under surveillance. This encourages him in his long fight for life.

Some of the results accomplished by this strict code of discipline have been more than gratifying to me, and though it is rather hard on the physician to listen to reports of all the little details of this treatment, yet the results of this work will be as apparent to him as to the patient himself.

I by no means underestimate the value of therapeutics in the way of drug tonics and certain pulmonary antiseptics, but as they do not come under the title of this paper, I shall omit them from consideration.

In closing I would say, that no athlete would think of undertaking some trying ordeal without strict disciplinary training, and no consumptive may hope for a recovery without strict discipline to natural laws governing exercise, fresh air, and proper diet, and abandonment of all injurious habits.

Pure Drinking Water for Country Homes and Villages.

Read before the Alabama State Medical Association, at Mobile, Ala., April 20th, 1904, By Edgar B. Kay, Professor of Engineering University of Alabama.

The problem that confronts the engineer in seeking a supply for a small village or town, is very different from that for a large city, and usually the finding of a satisfactory supply is a much less difficult matter, because of the smaller quantity required.

In any case the problem is dependent mainly on the geological structure of the rocks and soils from which water supplies may be gathered in the different localities.

The sources of water supply are broadly divided into two classes, to wit, surface-waters and ground-waters.

Included under surface waters are:

1. Rain-water collected from roofs, etc.,
2. Water from Rivers.
3. Water from Natural Lakes.
4. Water collected in Impounding Reservoirs.

Included under ground waters are:

5. Water from Springs.
6. Water from wells.
7. Water from deep and artesian wells.
8. Water from Horizontal Galleries.

In the determination of the source of supply for a village or town, the engineer seeks first, to find the purest water in the vicinity, that is ample in quantity and secondly, to estimate the cost of obtaining the supply, and the maintenance of the supply when once introduced.

Quantity Required.

The usual method of calculating the quantity required for any village is so many gallons per capita per diem, being the yearly average. This assumption which is often true for the year, is not true for different periods of the year. There is a great variation in the consumption of water in the different towns, due in a large measure to the different uses to which the water is put.

In the smaller towns, although some water may be used for manufacturing or mechanical purposes, it is not likely to be used to a great extent, as it is generally possible to obtain a satisfactory supply from other sources at a less cost, particularly if the quantity used is large. In manufacturing towns, especially those in which the manufacturers obtain independent sources of supply, the quantity of water used for domestic purposes is less, as there is apt to be fewer fixtures in the houses and little water used for the sprinkling of lawns, etc. In the suburban cities and towns the use of water for domestic purposes is probably greatest. During the year 1900 the Massachusetts State Board of Health report the following average consumption per person per day:

Metropolitan water district....	113 gallons
Average of eleven suburban cities and towns.....	69 gallons
Average of twelve large manufacturing cities.....	60 gallons
Average of thirty-three smaller manufacturing towns.....	42 gallons
Average of seven summer resorts	66 gallons

When a water-works system is first introduced into a town the consumption is comparatively small per capita, due to the limited number of people using the public supply, but the number supplied increases rapidly in most cases especially if the water is of excellent quality, until after a few years, water is supplied to practically the whole population. At the same time the number of plumbing fixtures in the houses gradually increases and the water is used for an increasing number of purposes. The introduction of sewerage systems also greatly tends to increased water consumption.

The average consumption per person per day in 24 Massachusetts towns increased from 23 gallons for the first year after the water was introduced to 36 gallons at the end of the fifth year and to 43 gallons at the end of the tenth year.

Besides the variation in amount of water required from year to year there is a very

marked difference in the monthly variations in the consumption in all towns. This variation is due to a variety of causes the chief of which is the use of an excessive quantity of water during dry weather for sprinkling lawns, gardens and streets, the amount depending upon the length of the dry season and the temperature. Again during the coldest period of the year, there is usually an increase in the consumption of water due to the waste of water from faucets to prevent the pipes about the house from freezing. In general it may be said that the consumption of water is influenced by the amount of rainfall and degree of heat or cold.

Records have also been kept by many cities and towns to show the variation for shorter periods, not only to determine the maximum weekly consumption, but the hours of maximum consumption daily.

The maximum consumption in any town, would occur when a demand for fire service happened at the hours of maximum consumption for other purposes. Turneaure & Russell in their book of "Public Water Supplies" State that the maximum daily ratio may be assumed as equal to 150 per cent of the average daily consumption; that the maximum hourly relation of maximum daily equals 150 per cent of the 150 or 225 per cent of the average daily, to which 141 per cent of the average daily consumption is added for fire fighting purposes, making a total of 366 per cent of the average daily or a little over 3.6 times the average consumption for the year.

The conclusion to be drawn from the summarization of all the data obtainable seems to be that the supply, whether gravity or pumping, must be proportioned largely in excess of the average annual consumption per capita. For domestic use 30 to 60 gallons per capita per day should be sufficient; where street sprinkling is done and lawns are extensively watered as well as gardens, the total amount of water used may reach as much as 75 gallons per capita per day, but will seldom be above 60 gallons per capita; where manufacturers and other large consumers such as railroads, use the public supply, the quantity required for the general use, may reach as much as 150 gallons per capita daily. These limits should not be exceeded where proper management is given and in many cases these limits are not reached.

The high average consumption in most cities and towns is not due to the water that is actually used but to the water wasted.

By the use of meters the per capita consumption has been reduced in some places as much as one-half and it is the only effective means of waste prevention.

Quality of water from various sources.

Before considering the quality of the waters derived from the various sources already mentioned, it may be well to have basis established of quality which will serve as a standard for comparison. Pure drinking water and pure water are two expressions commonly employed to express the same thought, but inasmuch as there is such an important differ-

ence between the two kinds of water, it is necessary that we distinguish and classify them in order that we may be able to specify what is desired. Pure water is not found in nature, it is a laboratory compound, hydrogen monoxide. Pure water is a powerful oxidizing agent, and if it could be obtained as a supply for a household or a town, would be entirely unsatisfactory. No neutral liquid surpasses water in its solvent action, that is in its power of liquifying solid or gaseous bodies brought into contact with it so that their particles become uniformly diffused through it, without tendency to separate out again on standing. Pure water is therefore unsuited for domestic purposes and is even more objectionable for generating steam as the great tendency to oxidize the metals with which it would come in contact would so corrode and scale the boilers and pipes that their efficiency would soon be lowered and the apparatus destroyed. Chemically pure water is therefore not to be considered in our search for pure drinking waters, however much we may under certain circumstances, employ the means used in the laboratories to procure pure water. A suitable supply for drinking and ordinary domestic purposes, should not only be pleasant and palatable, but if possible free from any marked color or turbidity. This last requirement, while desirable may not always be obligatory, as experience has fully demonstrated, that many peaty supplies and often turbid waters may be used with perfect safety. A potable water should not be excessively charged with mineral matter. A common prejudice exists against the use of very hard waters, as they are supposed to result in the production of various diseases, as urinary calculi, goitre, cretinism etc., but there does not appear to be well established scientific data that would positively confirm such opinions. It is more likely that intestinal and gastric disturbances may occur where permanently hard waters are used. Excessively hard waters are not desirable, as the flavor of many foods is considerably impaired when cooked in the same. The hardness of water is either temporary or permanent, depending upon the nature of the salts dissolved. If bicarbonates are present, the carbon dioxide contained in the same, is set free by boiling, in which case a white precipitate consisting of carbonate of lime is formed. As this reduces the amount of lime in solution, the hardness is diminished and such waters are called temporarily hard, in contradistinction to the sulphates and chlorides of lime and salts of magnesia that are not so affected; hence waters containing these salts in abundance, are permanently hard. All hard waters are unsatisfactory for boiler use or washing. Iron-bearing waters are also unsuitable for domestic supply, as the tannin in tea and many vegetables produces a black precipitate. These waters are likewise detrimental for laundry use as the oxidation of ferrous salts upon exposure to the air produces rust spots upon clothing. "When iron is present in water it

generally comes from the source of supply, and is not derived from the pipes except under certain circumstances. Where present in the proportion of 0.5 to 1.0 per million the water generally has an objectionable taste, and while the presence of the metal in small quantities is not attended with serious results on health, its undesirable taste and appearance are against its use."

Zinc is much less liable to cause trouble, although where water is in contact with galvanized pipes an appreciable amount of zinc may often be determined. Of the various metals that may be found in waters in sufficient quantity to be harmful, lead, zinc and iron are most likely to occur, when the water is acid, as in peaty waters or where carbon dioxide is present in large quantities the solvent action of lead is much increased. In such districts many cases of lead poisoning have been known to occur. Besides the sulphates of calcium (lime) and magnesium, sulphates of sodium and potassium occur in small quantities and have the effect of causing boilers to foam, but deposit no scale. Chlorine generally occurs in water in the form of common salt, sodium chloride. The sources of most chlorine in water are the ocean from which it is carried by evaporation and held in solution by the rain; the salt deposits on the surface, as on the western desert; or in the ground as in Western New York, Ohio and Kentucky; and lastly from sewage and urine. Rain waters in certain parts of Massachusetts contain 2.5 parts of chlorine per 100000 and 7 parts have been found in rain water in England. A well in St. Augustine, Fla., contains 136 parts per 100000 and those in Onondaga, N. Y., contain about 15000 parts per 100000, while the Great Salt Lake contains 20000 parts or nearly a saturated solution. The waters last mentioned are not potable and cannot be used for boiler or probably for any purpose for which water is required except fire extinguishing. In New York City the fire department is equipped with steamers that use the ocean water, and it was those engines that did such great service in the recent Baltimore fire. The amount of salt contained in any rain water or surface water deriving its salt from the atmosphere, is neither injurious nor unpalatable nor harmful to boilers. If it were not for the fact that salt is contained in sewage it would generally be unnecessary to determine its quantity in water. To decide how much of that found in a given water is due to sewage pollution, it is necessary to know the amount present in uncontaminated or normal water in the locality in question. This is generally determined by analyzing surface water (if it is a surface water that is being considered) taken above any possible sewage pollution and comparing its chlorine with that of the water in question. If it is a ground water that is being considered, little can be learned as to the sewage pollution from the chlorine determination. In Massachusetts and other states the Boards of Health have made analyses from all parts of their

states and thus determined the "normal chlorine" for each section. In general the amounts have been found to vary with the distance from the ocean. By means of "isochlor" lines the normal amount of chlorine has been represented for both Massachusetts and Connecticut. If the water in any place contains more than the normal chlorine, it should be looked upon with suspicion, until further examination reveals the source of excess. Another quality of a pure drinking water is freedom from odor, which may be occasioned by an impurity either organic or mineral in solution or suspension. "The organic may be living or dead organic matter and may be animal or vegetable. Mineral matter can generally be determined quite accurately as to both kind and quantity. The organic can be quite accurately determined as to quantity either in solution or suspension; the living organisms can be classified by the microscopist with considerable minuteness and certainly although much yet remains to be learned in this line." But of dead and putrescible organic matter and the products of decomposition of this, little can be learned through the microscope, and chemistry can but discover the elements or mineral compounds which enter into the composition of such matter. The chemist may determine the amount of nitrogen in a given water, and knowing that sewage contains a large amount of nitrogen, may suspect sewage contamination, but he cannot say that this mineral was not washed out of the air by the rains or from peat deposits in the earth by ground waters. In nearly every case, the actual amount of matter discovered is too small in quantity to be injurious. In the average sewage the total impurity is less than one thousandth of the amount of pure water which carries it; and a river water which the senses would not condemn, would generally contain not more than one fifty thousandth of impurities. It takes about 1000 drops of water to make a half pint or ordinary glassful, so that the amount of impurity, harmless and otherwise, in a glass of such water would be one fiftieth the size of a drop. It is not therefore the matter found, but the inference from its presence which is important.

Similarly the bacteriologist may determine that a cubic centimeter of water contains a certain number of bacteria, but in few cases have pathogenic bacteria been recognized with certainty in drinking water; and the number of all kinds present, is but an indication of the amount of organic impurity which may be very largely harmless. Water analyses therefore are experiments undertaken to assist the judgment, in determining the potability of the supply; they are valueless without a knowledge of the surroundings from which the water was obtained and the manner of obtaining it. Because the chemist cannot certainly find specific injurious matter, except by inference, however, is no reason for neglecting his services; but these should be used for all they are worth and

this may be considerable and interpreted in comparison with all other available data. Much of the suspended matter in some waters may become dissolved if time be allowed; organic may be resolved into its inorganic elements and these may alter their combinations. Organic matter appears in water as living organism, animal or vegetable; products of organic life as albumen, urea, tissues etc., dissolved or suspended; and products of decomposition of organic matter including mineral matters as salts of ammonia, carbonic and nitric acids. Carbon and nitrogen oscillate between the organic and inorganic state. Organic matter cannot be determined directly by chemical analyses, but only by indirect methods; the nitrogen compounds being generally taken as an index of the amount present, since it is the nitrogenous organic matter which has the greatest sanitary importance, owing not only to the facility with which it undergoes decomposition, but also to the fact that nitrogen is an essential element of all living matter. Analytical processes of great accuracy, enable us to determine nitrogen in four forms, namely: as organic nitrogen (albuminoid ammonia), as ammonia, as nitrous acid and as nitric acid. Organic matter consists chiefly as carbon, hydrogen, nitrogen and oxygen. When its life departs it begins decomposition, first by oxidation of the carbon, which leaves the nitrogen combined with hydrogen in the form of ammonia; and subsequently by the oxidation of the ammonia to nitric acid

which generally combines with some mineral base in the water. The free ammonia discovered by chemical analysis indicates that organic matter once present has begun rapid decomposition; that not yet decomposed whether living or dead is charged by the addition of chemicals to ammonia and given as albuminoid ammonia; while ammonia which has been oxidised is recorded as nitrites or nitrates according as nitrous or nitric acid has been formed. "Albuminoid ammonia is about 14-17 nitrogen and the amount of this obtained by the analysis is about one half the organic nitrogen present. Albuminoid and free ammonia therefore represent nitrogen in the earlier transition stages and inasmuch as these products invariably accompany fecal matter, their presence in water is of sanitary significance." Waters may however contain considerable quantities of free ammonia under normal conditions and still be entirely wholesome as in peaty moorland waters, in rain water and even artesian wells. It is evident from what has already been said concerning the physical, microscopical and chemical examinations of water as to its suitability for public use, that it is impossible to determine the character of a water by a single test. For a drinking water the most important investigations, should be to determine the presence in the proposed supply of specific organisms of disease, which are the really dangerous and polluting elements. Before attempting to summarize the characteristics of a suitable water for household purposes and the various methods

that are employed to determine its quality, your indulgence is asked, while an attempt is made to review the tests that have been made for bacteria of specific types as an index of pollution. In the 34th Annual Report of the State Board of Health of Massachusetts, Messrs. H. W. Clark and Stephen DeM. Gage publish the results of the exhaustive and elaborate experiments and investigations that have been carried on at the Lawrence Experiment Station for a number of years. The principal types of bacteria used as indices of the pollution of water are the colon type, the sewage streptococcus type, the sporogenes type, and occasionally the so-called paracolon types; that is the aerogenes, or enteritidis, garter type, and the cholerae type. The colon is the most numerous of the various types in normal sewage and is accordingly considered of the most value as a specific indication of pollution. The colon tests correctly interpreted are undoubtedly a valuable aid in the analyses of certain classes of water where the determination of suspected pollution becomes necessary. Examinations of sewage at Lawrence show that in dilutions of one in 10000 we may expect to find *B. coli* in 90 per cent of the samples, and that we may identify the sewage streptococcus in 67 per cent of the samples. A dilution of one in 50000 cuts the percentage of positive tests for *B. coli* to 78 per cent of the samples and the percentage of streptococcus to 6 per cent of the samples. Even in dilutions of one in 1000000 the *B. coli* was found in 6 per cent of the samples. While these colon tests are interpreted only in the light of their inaction of fecal pollution, many bacteriologists have an underlying if not a freely expressed opinion that *B. coli* has a greater significance. That this opinion is prevalent is indicated by the numerous articles in which *B. coli* and *bacillus typhosus* are compared, especially by bacteriologists working along pathological lines, many of whom have sought to show an interrelation between the two species, with allied species or races filling in the gap between the two, until we have a graduation of forms from one to the other, and the introduction of the terms paracolon and paratyphoid. Furthermore, it is believed by many that the *B. coli* and some of the so-called paracolon types are in themselves the cause of intestinal and digestive disorders, and even of maladies closely approaching typhoid fever. In the recent epidemic of typhoid at Ithaca, N. Y., attending physicians diagnosed no less than sixteen cases of paracolon fever, and one death from the same cause was given. While it has been definitely established that the *B. coli* and *B. typhosus* are two distinct types, comparative tests for the relative viability show that there is a very great similarity between the length of life of the two germs, under a great variety of conditions.

Outbreaks of typhoid fever coincident with the finding of *B. coli* in normally pure water, i. e., in water known to be safe under ordinary conditions, but becoming polluted by the entrance of polluted water, have occurred in

at least three instances in Massachusetts, where the danger was not indicated by chemical tests or by a significant increase in the numbers of bacteria beyond the usual limits of variation for waters of their class. The second outbreak of typhoid at Ithaca last summer was traced directly to a well that was normally regarded as furnishing safe water. In this case it was conclusively shown that *B. typhosus* was carried into the well by sewage deposited on the surface near by. While there are other mediums of typhoid infection besides drinking water, the fact that purification of the water supply in almost, if not quite, every case greatly reduces the typhoid rate, seems to argue that drinking water is by far the most important one.

The two well known instances of Hamburg and Altona, in Germany, and of Lawrence and Ithaca, in this country, are but pronounced illustrations among a great number of cases of the effect of water on typhoid death rates. It has been demonstrated at Altona and Hamburg and many other places that cholera is also a water borne disease, and it appears to have been demonstrated that an impure drinking water is a very important cause of diarrhoea, malaria and intestinal diseases.

Requisite Quality.—In deciding what can be called a pure water, or what limit of impurity can be fixed for potable water, great difficulty arises. Attention should of course be given to a proposed water supply from other points of view, but the relation of disease-dissemination is of paramount interest. In determining by means of a sanitary analysis, whether any water is suitable as a public supply, various methods have been followed as knowledge regarding these problems has been broadened. None of these methods, however, that have yet been introduced, are wholly satisfactory, and the subject of sanitary analysis is far from being reduced to terms of mathematical accuracy. "One prominent reason for the unsatisfactory results that are frequently found in analytical work is that many of the determinations apply only indirectly to the presence of specific disease organisms. This indirect relation, therefore, raises a question that must be interpreted anew in each individual instance. It calls for a discriminating judgment on the part of the analyst." In fact, the data which he collects do not answer definitely and decisively the question as to the purity or pollution of the supply, but as Professor Mason has expressed it, it merely aids him in interpreting his judgment.

"There is a very common disposition to look upon a water analysis as something similar to an assayer's test for gold, something that can be positively determined," but when there is taken into consideration the wide range that may exist in waters from various sources, and how the analytical results obtained in such examinations will of necessity be interpreted differently in samples coming from different regions, it is manifestly impossible for the analyst to arrive at any satisfactory judgment unless he is more or less familiar with all of the data that are intimately related to the case,

the character of the stratum from which the supply is derived, the possibility of pollution and the nature of the same, the kind of water, the conditions under which the samples have been secured and kept, are all questions concerning which he should have full and explicit knowledge. It is of course possible in extreme cases, such as badly polluted or exceptionally pure waters to determine their nature with certainty from a mere examination, but in the great majority of cases, where the conditions are less pronounced, the judgment may be at fault, because of ignorance of local conditions. A sample which would be regarded as satisfactory for a surface water might be condemned from a biological standpoint, if from a well, while the chemist would frequently reverse the conditions in testing certain artesian and surface waters. Chemical analysis can inform us of the amount of organic matter which is and which has been present, but not as to whether it is animal or vegetable, morbid or otherwise. Bacteriological analysis can inform us of the approximate number of bacteria per cubic centimeter in a water, but not always with certainty as to the presence of pathogenic ones.

Hence, no absolute standards can be based upon the determinations of either or both of these alone. The probability of either bacteria or organic matter being of such character as to render the water dangerous must be judged from their probable source and origin. Definite knowledge of a certain character is often desired as to the quality of water for different purposes, particularly in various classes of manufactures, but these data do not fall within the province of the sanitary engineer. "A sanitary analysis is the study of a water with the view of determining whether it now contains, has contained or is likely to contain anything that is detrimental to public health." Not only must potable water be free from any taint of suspicion that would indicate dangerous pollution, but at the same time water should not be objectionable in taste or appearance. A water supply should be suitable for laundry and general domestic use. This condition in many of the limestone regions is difficult to satisfy, and in such communities it is sometimes necessary to depend upon rain water stored in cisterns for all washing and laundry purposes. The majority of people mainly judge of the quality of water by its taste and appearance; if it is clear and sparkling and is fresh in taste, they will use it without question, caring little as to the possibility of pollution with disease bacteria. If these physical conditions be altered, suspicion at once attaches itself to the supply. This very general opinion arises from a rational conviction that wholesome water, especially that derived from the ground, is clear and ought to remain so. If for any cause a change occurs, it signifies a change in conditions, a possibility to which waters of first quality will not be subject.

A water supply subject to sudden and considerable fluctuations in its chemical and biological composition, is generally one that

should be regarded with suspicion, at least until the cause of such variations is satisfactorily explained. For other than sanitary reasons, it is evident that a suitable supply of water for domestic and drinking purposes should contain little sediment or dissolved mineral matter or acids; should have no appreciable color, taste or odor; should be free from organic matter, living or dead, and the cooler it can be delivered to the consumer the better.

Waters From Various Sources.—Having outlined the requisites of a suitable drinking water, the waters from various sources will next be considered.

Meteoric Waters.—Meteoric waters include the various forms of rainfall, as rain, snow, hail, dew, etc., and while they are not used to a very great extent as the immediate and direct source of supply in the Northern countries, there are many towns in the South and in the adjacent countries and islands that rely wholly upon the collection of water from the roofs of dwellings and other buildings.

As watery vapor condenses in the air and is precipitated, whether in the form of rain or snow, it absorbs impurities from the atmosphere. Particles of dust and dirt are washed out of the air, and in the neighborhood of large towns, soot and other combustible products may pollute these waters to a very considerable degree. The gases that are naturally present in the air are more or less absorbed. Not only is this true with the most important constituents, nitrogen, oxygen and carbonic acid, but such substances as ammonia, sulphuric acid, nitrous and nitric acids are generally found. Naturally meteoric waters are deficient in mineral matter and are soft. Where extremely soft, their action on lead pipes is severe. Water in falling to the ground also takes up germ life from the air. Bacteria and spores of fungi find their way into it in considerable numbers from the subjacent soil layers, and while they are incapable of multiplication in the air, yet in the dried condition many forms can retain their vitality for long periods, with the result that either rain or snow catches these floating forms of life and so they are carried down. Even in hailstones, they are to be found without exception. As these meteoric waters fall on the earth, a portion of same is evaporated back into the air, while the remaining either finds its way into the water courses or percolates into the underlying soil. That which is apparent on the surface of the soil is termed surface water, which also includes that portion of the supply which has been subject to more or less percolation through soil layers, including springs and ground water drainage into rivers. Since surface waters are brought into contact with mineral and organic matter that renders them more or less impure, the quality of such waters is subject to much fluctuation. Organic refuse, either of human, animal or vegetable origin, finds its way into these waters with the inevitable result of greater or less pollution. Inasmuch as the most dangerous refuse of this character is that connected with human exist-

ence, it follows, where pollution is at all possible, that the density of population will exercise a potent influence on the character of such supplies. For this reason the use of surface waters, particularly those of flowing streams in densely populated watersheds, is a menace to public health, unless they are first subjected to some adequate method of artificial purification. Naturally the availability of running streams as sources of public water supply has led to their more frequent adoption than other kind of surface water, but it must be remembered that this is not because they are of better quality. Water in flowing over the surface of the soil naturally acquires numerous impurities that it would not take up, if it remained quiescent. One characteristic of flowing water is the sudden change in composition that is liable to occur at almost any time. Hence, such a supply which may be entirely satisfactory for the greater portion of the year, may be rendered undesirable in a short time. Again, running streams are the natural drainage channels of a region and they frequently serve to a large extent as sewage outlets for urban populations that are generally increasing in density. While there is an unquestioned self-purification of running streams, due to aeration, chemical reactions, dilution, sedimentation, sunlight and other causes, from all available data it seems evident that a stream once polluted with any considerable amount of sewage, is unsafe to use for a water supply, so long as there is any trace whatever of pollution remaining. Disease bacteria can retain their vitality for a longer period than pollution can be recognized, hence the possibility of disease is present whenever it can be shown that a stream is polluted with sewage material.

Lakes and Impounded Surface Waters.—Lakes can in general be relied upon as more constant than rivers in both the quantity and quality of water available. In large bodies of water, such as the Great Lakes, the effect of pollution is limited to shore regions, but under certain conditions may be considerably extended, as is to be noted along the south shore of Lake Superior, where the water is frequently rendered densely turbid for a distance of from six to ten miles from the shore, due in this case largely to a stratum of red clay along the coast line. Rivers emptying into lakes, such as the Genesee into Lake Ontario at Monroe, N. Y., will have their contents carried under favorable currents far out into the lake.

The quality of surface waters is sometimes affected by the development of vegetable life. This is particularly apt to occur in shallow lakes where the growth of water weeds, as *Myriophyllum*, *Chara*, *Vallisneria*, *Ranunculus*, etc., may be so rank as to accumulate organic matter in large quantities. While these plant forms have no direct relation to disease production, yet the decay of this vegetable material may seriously affect the quality of the water.

It was formerly held that the presence of any appreciable odor was due entirely to the natural processes of decay, but in addition to

these, it is now known that a number of living organisms, both plant and animal, give off odors during their development, due to the presence of oils, formed in the cells. Oils of different sorts can be detected by the sense of taste, in extremely dilute solutions. According to Whipple, the odor of peppermint can be noted in water containing one part oil to fifty million parts water. Among the number of plant and animal forms that frequently appear in ponds and reservoirs used for water supplies, may be mentioned the *asterionella*, which is a diatom; where only a few of these organisms are present the odor is aromatic; where more abundant, it recalls a geranium odor, and where very numerous, a distinct fishy odor is apparent. Other diatoms are not infrequently found, but their odoriferous properties are less pronounced. Grassy odors are caused mainly by the blue green algae, the cyanophyceae. The most distinctive member of this group is *anabena*. When abundant the water has the taste resembling green corn. Vegetable odors are caused by the diatoms, *synedra* and *melosira*. Of all impurities of this class in water, fishy odors are the most objectionable. One of the animal forms belonging to the protozoa *uroglena*, produces an odor resembling cod liver oil, while another *synura* recalls the odor of ripe cucumbers. Troubles of this kind have appeared several times in the Boston, Mass., water supply. Troubles from bad or unpleasant odors in water supply are very much more apt to occur in open surface waters than in any other; consequently impounded supplies may develop these abnormal conditions at times. Of seventy-one supplies examined by the Massachusetts Board of Health, a bad taste was noticed in forty-five, and of these two-thirds gave serious trouble.

Subterranean Waters.—That portion of the rainfall that finds its way into the soil is rapidly changed in quality by percolation through the various soil layers. As it flows through the soil toward the ground water level, it loses the larger part of the impurities derived from the air and the soil surface, but at the same time it absorbs other substances from the layers through which it passes, so that in general the quality of subterranean waters is materially different from those of surface origin. To some extent, the gaseous content or rain water is changed as it courses through the soil.

The particles of suspended matter, together with the organic matter and bacteria derived from the upper soil layers, are readily removed in the percolation process, so that at a depth of a few yards at most the germ life at the surface of the soil and all its attendant impurities have been eliminated. The water flowing under ground toward a stream or ocean may emerge as springs or be reached by wells dug or bored to and into the porous stratum through which it flows. Such water seldom flows in the form of a stream, nor is it collected as underground lakes, although such lakes are occasionally found, but it generally fills the porous stratum throughout and

moves slowly through the interstices toward the outlet. This movement is not always downward, but the outlet must always be lower than the point where the water enters the soil. The distance through which the water must pass before it is sufficiently purified for potable purposes is a question of very considerable importance. Judging from the higher typhoid mortality rates of populations using shallow wells, in comparison with those utilizing a supply from a deeper source, it is evident that efficient purification is often not reached in shallow wells. This is of course due in some cases to direct pollution. Not infrequently it may happen, where the ground water is subject to considerable oscillations in level, that at high stages this generally sterile water layer comes in contact with soil that is filled with putrescent matter, and bacteria of morbid types. This condition might arise in towns where the land has been filled in and where decomposing organic matter is some distance below the surface of the soil.

The depth necessary to insure efficient purification will also vary with the filtering power of the soil. Loose sandy or gravelly soil having larger pore spaces, will permit a more ready filtration than compact clay loam. Then there is a possibility of direct rifts or channels existing in the soils or rock. Holes made by animals, earth worms, crustacea, etc., frequently permit a direct passage of unfiltered water to considerable depths. A number of cases of wells and springs have been recorded where the germ content was so high and of such character as to leave no doubt but that there was direct connection with the surface. The classical case of Lausanne, Switzerland, typhoid epidemic, where the village well was infected from a polluted brook over a mile distant, but which had an underground connection with the well, is a striking illustration of the unreliability of natural purification through the soil layers. At Lausanne, seventeen per cent. of the entire population died of typhoid fever; only six families whose water supply was not from the spring or well that supplied the rest of the village, escaped the contagion. Two and a half tons of flour dissolved in the water at the distant point from which the spring derived its supply, were so completely filtered that no trace of discoloration appeared at the village, yet several hundred weight of salt being dissolved in the same manner, the water at the village became salty and undrinkable in a few hours. This experiment verified the suspicion entertained as to the spring being polluted by the excreta of a person attacked by typhoid fever, upon his return from a distant city. The clothing of this patient had been washed in the brook, the waters of which had been used for irrigating a meadow.

The water thus spread over the fields, and filtered through a ridge for a distance of a mile, still contained the germs of disease in it, and brought a terrible calamity upon the unsuspecting population of a hitherto healthy village.

Spring Waters.—In the popular mind

springs are supposed to represent the purest of supplies, but under certain circumstances this type of ground water may not be wholly pure. They are produced by percolating rain water flowing along an impervious stratum until it finds an outcrop to the surface. Often in mountainous districts the depth and thoroughness of percolation over and through rock masses is so limited that the water may not equal in purity the normal ground water. Generally spring water, before exposure to surface of soil, are relatively deficient in micro-organisms, as they represent filtered waters, but as they appear at the surface, the water comes again in contact with organic matter and bacteria in the soil, and may thus receive a considerable quota of organisms from this source, although generally the germ content of unpolluted streams is below 100-200 per cubic centimeter. While spring water usually has a low initial bacterial content, the organisms found in this class of waters possess the property of very rapid multiplication during storage. For this reason all underground waters should be stored in covered cisterns or reservoirs.

Well Waters.—It frequently happens that there may be several geological layers superimposed on each other that serve to collect the water from different areas. Under such circumstances, the upper stratum will retain the local ground water of the region while the more copious supply beneath is the result of percolation from a larger and perhaps distant source. Shallow wells generally strike only the surface ground water, which is sometimes of poor quality, while the water of deep wells, which tap the larger, more universal supply in the rock, is usually more thoroughly purified. Shallow wells dug in the soil and walled up dry are found not alone in country homes, but in the more crowded portions of cities. Generally these are sunk in soil that is more or less thoroughly impregnated with organic refuse, so that the water in the same is often in a polluted condition, not having been purified by its passage through a shallow and at the same time contaminated soil stratum. Again, wells of this character practically serve as drainage basins for the thickly populated areas above them, and when walled up dry, sewage from the soil is carried directly into the same. The influence of near by closets and vaults is thus frequently observed. Cesspools are particularly dangerous, because they contain so much water which must find its way into the soil by percolation. Just how far wells of this character should be placed with reference to vaults and cesspools, depends upon the character of the soil and the surface contour. In shallow wells, where the ground water may be lowered by pumping, the zone of influence may be greatly extended. Phnfl places the average distance at one hundred feet, but it is evident that no exact limit can be drawn. Where the ground water lies near the surface, the distance should be increased to a maximum limit. Wells of this class may be polluted directly from the surface, unless graded up so as to carry off the local drainage,

and such wells frequently serve as disseminators of water borne diseases. Their condition is at once betrayed by a chemical or bacterial test. If they contain large numbers of bacteria, and the presence of gas producing indol forming organisms, their impure condition is at once indicated. Such wells generally have a high chlorine content, as this element continues to increase with the growth of population, and the presence of considerable quantities of ammonias and nitrogen in nitrous and nitric acid forms is further proof of pollution with organic refuse. The better class of wells that are sunk into the permanent ground waters are either drilled or driven. In these the sides of the wells are made impervious to seepage by iron casing, so that barring pollution from direct surface drainage at the top, the only chance for contamination is in tapping an impure ground water.

Artesian Wells.—In flowing wells, where the flow is always outward, it would be difficult to imagine how infection from the outside might occur, and yet a bacteriological examination of such waters not infrequently reveals the fact that they contain some bacteria, although generally in greatly reduced numbers compared with ordinary wells. Such a condition would naturally seem at variance with the idea that the ground water is practically sterile; but when one recalls that in a number of these deep subterranean supplies crustacea and small fish have been found in some cases, it is evident that a deep supply does not necessarily mean that the water has been filtered through a very deep layer of soil or rock. From many water-sheds in the Atlantic and Gulf States the ground water travels hundreds of miles to emerge in the ocean bed far from shore, as off the coast of South Carolina, east of Matanzas Inlet, and off the shore of Pensacola, Fla. This Atlantic and Gulf coast region furnishes one of the largest and most important artesian areas in the United States. It has its northern limit in Long Island, and extends to Texas in the South. Along the Atlantic coast it will average perhaps a hundred miles in width, but along the Gulf it broadens out, extending up the Mississippi Valley as far as the Ohio river, and in Texas it has a width of 200 to 300 miles. The several strata in which water is found belong to the cretaceous formations. They outcrop along the foot-hills of the higher country to the west and north, dip toward the ocean at a considerable slope (20 to 40 feet per mile along the Atlantic coast) and presumably have their lower outcrop in the deeper ocean, many miles from shore. Their connection with the ocean is indicated by the currents of ocean springs and by the effect of the tide upon the pressure in certain wells. At Pensacola the water level of the wells located several feet above sea level varies from six to ten feet, as the result of tidal interference. The conditions in this region are evidently very favorable for artesian wells, and the various water bearing strata furnish an exceedingly valuable and pure supply, which can generally be obtained at comparatively

low cost. Among the cities that get their supply from this source are Savannah, Charleston, Jacksonville, St. Augustine, Key West, Memphis, Galveston, Fort Worth, Atlantic City, Montgomery, Huntsville, Selma, besides many small towns, and there are numerous artesian wells furnishing water for private use and farm purposes.

Ice Supplies.—The quality of ice is dependent upon the character of the water before it is frozen. It is true that some of the grosser impurities are expelled from the water when it is frozen slowly, but it does not follow that ice made from polluted water is safe for human use. Impure ice is as dangerous as impure water. Experiments have conclusively shown that typhoid and other pathogenic organisms are able to retain their vitality for long periods of time when frozen. Some families use melted ice in summer as their principal drinking water. It is evident that the same care should be exercised to procure ice made from pure water that is taken to, procure and protect a general supply of pure water for all other household purposes.

The Selection of a Supply.—It is evident from what has already been said that the development of a water supply for any home or town where a general system of water works has not been installed is a problem separate and distinct from that of any existing plant. There never were any two towns in which the conditions of supply and consumption were identical. J. H. Fuertes, in his book on "Water and Public Health," has arranged data from a large number of cities and towns both American and European, and classifies the various sources of supplies in their relative purity as follows:

Class A. Mountain springs with sources undoubtedly beyond the danger of pollution.

Class B. Water properly purified by slow sand filtration.

Class C. Pure ground water supplies.

Class D. Surface water supplies, with large impounding reservoirs and legal provisions against pollution.

Class E. Large normal rivers, or rivers in which the pollution may be considered to have greatly vanished through the agency of sedimentation, dilution and other causes.

Class F. Large inland lakes, which may be subject to more or less pollution.

Class G. Upland streams and small lakes, with limited water-sheds, which are more or less inhabited.

Class H. All rivers and public and private wells which are known to be polluted with sewage and other infectious matter by varying degrees.

For individual supplies and villages, the selection of supplies should be made from Class A or Class C if practicable. In Alabama, in the northeastern two-fifths or mineral region of the State, numerous springs appear, some of which have a large flow, as at Huntsville and Tusculum. The flow from the latter spring being estimated at 1,000 cubic feet or 7,500 gallons per minute. While the springs in this region usually contain lime and some

contain sulphur and other mineral matter, they are usually safe waters for drinking purposes. Many of the mineral springs of this region have been employed for their supposed medical properties, and resorts have been established which formerly were well patronized. In the southwestern three-fifth of the State, which embraces the coastal plain or agricultural region, the probabilities of obtaining pure water supplies by flowing or non-flowing artesian wells is generally assured. The numerous wells that are now supplying private establishments, villages, plantations and manufactories all over this region sufficiently justify this statement.

Filtered Waters.—Where it is necessary to employ surface waters, their use should be safeguarded by adequate filtration. The principle of slow sand filtration, which is being employed by many cities, gives very satisfactory results, but it is an impracticable method of purifying waters in small quantities. In fact, none of the various methods of filtering water for large supplies, including the Fischer Tile Filter, the various types of mechanical filters, including the use of a coagulant, aeration, the various processes of water softening, treatment of iron waters, purification by electricity, the Anderson revolving purifier, and other forms and types of purifiers, are adapted to the filtration of water in small quantities.

Domestic Filtration.—Frequently it becomes necessary to adopt some means for the purification of a water supply for household use, when its quality is not above suspicion. For this purpose a large number of different filters have been devised, but many of them are so inefficient as to be worse than useless, for it frequently happens that the possession of a filter hurls the consumer into a state of false security. The best of these filters, suitable for household use, are those made of unglazed porcelain (Pasteur filter) or fine infusorial earth, as used in the Berkefeld filter. Filters of this class are comparatively porous, thus permitting a fairly rapid flow. In this respect the Berkefeld is superior, as it filters considerably faster than the Pasteur. Both these filters deliver a wholly germ free filtrate, when they are first put in service, but unless they receive close attention, sooner or later lose this property. The pore spaces in filters of this class are not smaller than the bacteria that ordinarily abound in the raw water, hence the removal of these organisms is not purely mechanical. There seems to exist a certain attraction between the bacteria and the particles composing the filter, so that the former are prevented from being forced through the pores. This attractive property varies with different materials. Guinocet states that the pores of the micro-membranes of the asbestos filter made by Breyer are smaller than in the Pasteur filter, and yet bacteria pass these quite readily as additional water is passed through these filters, the pore spaces become reduced in size, owing to the accumulation of organic or other matter, until finally a living pellicle or membrane is formed on the outer

filtering surface. This results in a diminished flow of the effluent. The bacteria that abound in this slimy pellicle are not destroyed, and if the temperature is favorable, they begin to grow and force their way through the pores of the filter, and so appear in the filtrate. Filters of this class, therefore, retain their germ proof qualities for periods that are in a measure inversely proportional to the temperature of the water. Generally speaking, these filters should be cleaned and sterilized in boiling water or in steam under pressure once a week in order to kill out the germ life that has found lodgment in the pores. In this way not only is the sterility of the filtrate maintained, but the yield of filtered water is increased. Other types of household filters, such as those constructed of porous stone, charcoal or asbestos, have been on the market for many years. Judging from the popular standpoint of purity, which is generally the production of a clear water, many of the filters would be regarded as quite satisfactory, but as a means of removing germ life, they possess for the most part but little merit.

Sterilization and Distillation.—There are no pathogenic bacteria that are liable to be distributed by the way of the water supply that are able to withstand the influence of boiling water for a period of 15 to 20 minutes. The developed bacteria of cholera and typhoid succumb ordinarily in five minutes or less, but the undeveloped germs seem to have greater viability, and it may require as much as 15 minutes to completely sterilize a water containing them. In case of sudden outbreaks of disease or temporary disturbance of installed water supplies, this method can always be relied upon with perfect safety. There are several types of sterilizers, such as the Desauter sterilizer, Siemen's apparatus, Wachenseh and others that have been placed on the market and are adapted to individual use; also apparatus that is designed for the treatment of large quantities that would be of service in case of epidemics. Boiling does not, however, render potable a water containing large amounts of organic matter, although it may destroy the disease germs that may be therein. By distillation a water can be obtained from dissolved matter as well as bacteria. The United States Navy is probably the most extensive user of distiller water, this being the only supply on practically all its vessels. In a recent test of a "triple effect evaporator" at the Dry Tortugas, Fla., a net distillation of 13.98 pounds of water per pound of coal was obtained. Objection is often raised against the use of distilled water for the reason that it contains no salts in solution, and hence exerts a powerful osmotic effect on animal cells by withdrawing the water from them, but its use has not been sufficiently extensive to warrant definite conclusions. Distilled water is rendered more palatable by aeration and the introduction of a small quantity of salt.

Chemical Purification.—There are a considerable number of chemical substances that may be added to water in order to purify it,

by carrying down the suspended matter as well as bacteria by sedimentation. Such a process of purification is to be seen in the addition of alum, sulphate of iron and calcium carbonate to water. In addition to these methods, a large number of different systems have been devised, the effective principle of which rests upon the germ destroying action of some chemical substance which is later rendered innocuous in some other way. These methods as yet have had only limited application, but they seem to offer rational and practicable means of disinfecting water. Among them, and apparently the most successful, has been the use of ozone, electrolytically generated and passing through the water. Traube's method consists of the addition of chlorinated lime or bleaching powder. By virtue of the active chlorine which it contains, it will destroy all bacteria in a few hours, even in extremely dilute solution. The excess of the chlorinated lime may be neutralized by the addition of sodium sulphite or calcium bisulphite. Water so treated is perfectly harmless, and does not have its taste or appearance impaired; in fact, remains unchanged, except for a slight increase in hardness.

Peroxide of Hydrogen.—This disinfecting agent can also be used in the sterilization of water. In solutions of 1-10,000 the cholera organism is killed in five minutes, the typhoid bacillus in one day in solutions of double this strength. In proportions of 1-1,000 water is rendered practically germ free within 24 hours, and these proportions do not affect the taste. A number of other methods have been exploited from time to time that involve the use of other chemicals, but no attempts on a large scale have been made to utilize them in sterilizing drinking water. For general domestic use, no water requiring treatment is to be recommended; first, because of the expense involved in procuring the required purification, and, secondly, because of the danger through carelessness or neglect of not being able at all times to maintain a proper standard of purification. The capitalized cost of maintaining a purification system will generally more than suffice to provide a supply of wholesome water. Where hard water alone can be obtained, it can be softened, if temporarily hard, by boiling, when it forms a compact sediment; also by adding carbonate of soda, which combines with the carbonate of lime in the water and bicarbonate of soda and carbonate of lime result. The former remains in the solution, but does not render the water hard, and the latter is precipitated as a fine powder. By the addition of lime water (solution of freshly burned lime) to a temporarily hard water, the carbonates of lime or magnesium are reduced to insoluble moncarbonates, which form a fine precipitate. This last method is the least expensive of the three. Permanent hardness can be removed by adding carbonate of soda, which uniting with the sulphate of lime or of magnesium, form an insoluble carbonate of these bases together with sulphate of soda, which remains in solution, but does not harden the water. When

water is both temporarily and permanently hard, a mixture of lime and carbonate of soda generally gives the best results. Having procured a satisfactory supply of water for domestic use, it is necessary that such constructive measures shall be taken as will enable the water to be transported from its source to the place of utilization without impairing its quality, and of storing it in sufficient quantities for all ordinary uses or emergencies. The methods and apparatus employed to secure these results are varied and extensive, but the limitations of our theme will not permit of their consideration at this time.

Authorities freely quoted: Professors Turneure & Russell, Folwell, Mason. Reports of Massachusetts State Board of Health.

Dental Caries and Popular Fallacies.*

By George J. Friedrichs, M. D., D. D. S., New Orleans, La.

Caries, the principal disease of the teeth, has existed in all historic ages of the world, for wherever prehistoric human remains have been discovered, traces of this disease have been found. All nations and tribes have not all been equally affected, yet no race of man seems to have been exempt; all more or less have suffered from its ravages. There is no disease that is so common or so widespread, or that so generally afflicts the human family. Caries of the teeth is produced by a chemical disintegration of the elements of the teeth, molecule by molecule. This disintegration always begins on the surface of the teeth, usually in some pit, fissure or other irregularity, at the point of contact of the proximal surface, and about the necks of the teeth. When once begun, the destructive process spreads toward the interior of the organ; and as dentine is more readily affected than the enamel, a cavity is formed whose interior is larger than its orifice. If this process is not arrested or checked, the whole crown of the tooth, in due time, is destroyed.

When the molecular motion theory of Baron Von Liebig on fermentation was superseded by the brilliant experiments of Pasteur, a new light dawned on the problem of dental caries; for Pasteur conclusively demonstrated that neither fermentation nor putrefactions could progress without the presence of organic germs. Drs. Underwood and Miles, in a paper read before the International Medical Congress, London, in 1881, entitled, "Effects of Organisms Upon the Teeth," summed up the following conclusions as the result of their experiment: "We consider that caries is absolutely dependent upon the presence and proliferation of organisms. That these organisms attack first the organic material, and feeding upon it, create an acid, which removes the lime salt; and all the differences between caries and simple decalcification by acids is due to the presence and operation of germs."

"That suppurative of the pulp, and its se-

quelae, such as alveolar abscess, depends also upon the successful working of organisms. We feel justified in concluding that the successful exclusion of germs would prevent the disease."

This new dogma of the stiology of dental caries was received with queries, doubts and surprise, producing a sensation the like of which probably will not occur again in a life time.

A new field for research and investigation opened up to the profession a plausible theory as to the cause of dental caries, ending the surmises and theories that formerly obtained credence.

Now, let us see what has followed from the above assertions.

1st. "That micro-organisms* are constantly present in decaying dentine, as announced by Leher and Rottenstein, has been confirmed.

2nd. "The softening of dentine in caries has been shown to be chemically identical with that produced by certain weak organic acids." (Miller, Jesserich, Benefeld and Black.)

3rd. "Artificially, caries have been produced which under the microscope cannot be distinguished from natural caries, by subjecting sound dentine to the action of these fungi in fermentable solution." (W. D. Miller.)

4th. "Fungi exist in great numbers in the human saliva, and in carious dentine, which have the power to produce acid under conditions which are constantly present in the human mouth. I determined this acid, for one of the fungi at least, to be the ordinary ferment of lactic acid." (Dr. W. D. Miller, Berlin.)

In accordance with nature's process in fermentation, the production of lactic acid must ensue in the oral cavity, independent even of the presence of micro-organisms.

All farinaceous grain, the chief food for man and beast, have an inherent organic ferment that has the power to convert the starch contained in the grain into sugar. In germinating the ferment diastase is evolved; the steps in the process being, first, the formation of soluble starch, then dextrine or gum, which next passes into glucose or grape-sugar; there is usually at the same time produced a small quantity of lactic acid. At a high temperature on malting this conversion of the sugar into lactic acid is evolved in considerable quantity, if the malt is allowed to cool in a moist state.

If this is nature's process of evolving lactic acid outside the mouth, why should not this process take place in the mouth, where moisture and heat are most favorable to fermentation, and minus any specific microbe?

In 1898, Dr. J. Leon Williams, D. D. S., FR., MS., London, England, read a paper before the British Dental Association in which he expressed the opinion "that all softening

*Read before the Louisiana State Medical Society, at New Orleans.

*The above statements are quoted from my "Micro-Organisms of the Human Mouth."—Dr. W. D. Miller, Berlin.

***"American System of Dentistry," Litch.

of the enamel is due to the action of acids, and chiefly or wholly to acid excreted by bacteria 'in situ,' from accumulation of food, i. e.: at points which are not kept mechanically cleansed. Films are likewise found under exactly the same condition, and consequently films and caries must occur together, but we are hardly justified by this fact in making one of them dependent upon the other.*

Conclusion: "The membrane affords a matrix for bacteria, as well as for minute particles of food, and thereby accelerates the process of decay"—expresses fairly my present impression regarding the gelatin plaques under consideration."

The foregoing historic summary represents the status of what is known today of the etiology of dental caries, but this knowledge does not cover all the lesions to which the teeth are subjected. The teeth are subject to an affection characterized by a loss of substance of the organ, occurring without any apparent cause. It always has its beginning on the surface of the teeth, over a limited space, and very gradually a pit or groove is formed, which steadily widens and deepens, until, in many cases, a large part of the tooth is destroyed. This disease is called erosion of the teeth by some, chemical abrasion, decay by denudation, etc.** "The etiology of erosion is probably one of the most obscure subjects in pathology. With our present knowledge, it is practically unexplained." "The theory that it is caused by acid mucus, is supported by several who have written on the subject. While unsatisfactory in the extreme, there seems to be nothing better to offer." (G. V. Black, M. D., D. D. S.)

It sometimes attacks only one tooth in the arch, whilst all the rest of the teeth remain intact and unaffected. Another singularity to be noted is that it attacks both the enamel and the dentine, while against ordinary caries the enamel is a protection; its favorite field of action is the labial and grinding surfaces of the teeth, generally leaving the eroded surface perfectly smooth and polished. Fortunately for humanity that this disease is rare.

When we take into consideration that antagonism is an essential factor of human existence, that motion and life cannot go on and one meets isolated cases only occasionally,

without it, that whilst the most active force, the building up process, is going on, the opposing force or breaking down process is equally efficient. Hence it follows that it is only when these forces diminish in activity that there is an arrest in dental caries. Statistics conclusively prove this.

Caries of the teeth is essentially a disease of youth, and it is a notable fact that the predisposition to caries diminishes as age advances. One of the reasons for this is that by the time a person has reached the age of eighteen, all points favorable to decay have been attacked, and as we advance in years the teeth themselves become more dense; consequently are better fortified to resist the inroads of decay. The remedies employed to

stay the progress of dental caries, as a rule, are mechanical.

In its incipency, in some cases, by filling out the carious spot, and polishing the surface so as to leave a self-cleansing space, will answer the purpose. The application of nitrate of silver until a covering or film is deposited on the surface of the carious spot, will arrest its further progress, provided there is no depth to the cavity, so that no extraneous substance can remain to dissolve the film in the process of fermentation, which constantly takes place in the oral cavity. When the cavity has advanced to such a degree that neither of the above remedies will apply, obturation must be resorted to. This operation, the *modus operandi* of which I shall have nothing to say, yet I will dilate upon what it should be and what may be expected of it, if properly performed, and what it should accomplish.

The material employed must be inert and indestructible; it must be packed solid, so as to render it impermeable, and secured in such a manner in the cavity that force will be necessary to dislodge it; the material must be left flush with the orifice of the cavity, and finished in such a manner that it can be kept clean. If these conditions are not attained, no hope can be entertained that the operation will preserve the tooth from further decay.

For a filling in a tooth is not a restoration of the part lost through decay, but merely a patching up; and in doing this the oral surgeon performs no radical cure, for he does not remove the cause, which still remains present, ever ready to counteract the operation.

The most important operation in dentistry is that of filling. Anyone who sets himself up to perform this operation and who is not competent is, in my estimation, worse than a thief. A thief steals only filthy lucre, while a dentist incompetent to fill a tooth properly adds abuse to injury, and he not only inflicts unnecessary pain, but steals his patient's time and money. He gives assurance that the tooth operated upon is put in a condition of further preservation; with this assurance the patient, although his teeth may give timely warning that all is not as it should be, usually, before a competent operator is consulted, caries may continue to progress to such an extent that the vitality of the teeth are endangered, and an irreparable loss to the patient must ensue.

Under the head of popular fallacies: It is often amusing to listen to the views expressed in regard to the causes of dental decay; some will put the blame on erosote. "Never had decayed teeth until erosote was applied to relieve pain." Others again give the use of sugar all the credit for the bad condition of their children's teeth. The preparation of iron medicinally administered is another scapegoat; also the preparations of mercury; ice-water, hot drinks and climate. This is a general reason given by foreigners, "never heard of such a thing as decayed teeth in the old country." Soft foods, "the foundation for bad teeth."

It is a noted fact that the Esquimaux, liv-

ing on the whale blubber, the tropical Oriental with ricediet, and the savage with his forest nuts, grain and dried meats, have each and all equally good masticating organs. Lack of sufficiency of lime in our food—because the “staff of life,” the bread as now prepared, is principally composed of starch. According to Dr. Playfaire, “average dietaries” for adults in health, about twenty grams of mineral matter are daily introduced with the food. If such is the case, this only proves that the tissues may be bathed or saturated with lime salts. Yet, if they be not taken up or appropriated, their presence is of no value.

Nutrition is a tissue function; the act of this process is the appropriation from without of the materials which enter into the composition of the living frame, or of others which may be converted into them in the interior of the body. The difference between the protoplasmic elements that originate a tooth and those which originate a bone, we may never be able to distinguish; yet we know there is a force that directs to formation, as certain as intercepted light will cast a shadow. Over this process or affinity we have no control. Germ-potency determines not only the time for the appearance of an organ, but also directs its form and function.

In conclusion: Given a perfectly organized denture, an unimpaired nervous system, in a sound body without inherited taint, teeth would never decay as long as this condition was maintained, and that, too, irrespective of climate, peculiar kinds of food, or any external agents which might be brought in contact with them, in the process of mastication.

Cleanliness, the daily brushing of the teeth now considered so essential, would be unnecessary as a preventive measure and be practiced only for its comfort.

The Thyroid as Pertaining to the Subject of Practice of Medicine. *

By W. K. Lane, M. D., Goldsboro, N. C.

For many years the thyroid gland has commanded the attention of the medical profession. For many years the important part that the thyroid gland plays in the maintenance of health of the body has been in some respects a conjecture. According to some the thyroid secretes a substance which influences the nutrition of the nervous system.

Many interesting facts have developed from the researches that have been made. For instance, cretinism, which up to the last few years was looked upon as only a low form of idiocy, is now known to be due to the maldevelopment atrophy or absence of the thyroid gland. *Adiposus dolorosa* or known as *dercums disease*, is yet under dispute as to the pathology, some of the best authorities still clinging to the idea that it is due to a pathological

condition of the thyroid, but by others to be due to a pathological condition of the pituitary body.

In the spring of 1902, I had the opportunity of seeing the thyroid gland as well as the pituitary body taken from a case who had suffered with this condition, the thyroid gland being diseased but the pituitary body was more involved.

This and other cases have given rise to the belief that the involvement of the pituitary body is responsible for this condition, but as yet it is only a conjecture. As in most of the cases (which have been few) the thyroid was involved in one way or another. Myxedema, a progressive disease, manifested by the infiltration of a gelatinous substance into the sub-dermal tissue a decline of health and mental failure. There is not only a change in the connective tissue but in the entire body.

The disease develops slowly and as it progresses the face, neck, and other parts have a bloated appearance, the nose widened and flattened, thick lips and tongue giving a dull appearance, hair poorly nourished and scanty, the hand and feet enlarged, skin thick, coarse and yellowish white which does not pit on pressure, eyebrows and lashes fall out and baldness may occur. Of the nervous manifestations it is inclined towards dementia, there at times appearing hallucinations of sights and hearing and some grow irritable and suspicious. There is slowness of movement and thought. More women are affected than men; some say in the ratio of 10 to 1, others 6 to 1. It may attack families and is transmissible through the mother. It is a disease of middle life.

The cause of the above is atrophy of the thyroid; the exact factors influential in establishing the condition are poorly understood, but by some it is thought to be an inflammatory and productive process inducing sclerosis like that seen in other secretive organs. It is not impossible that in some cases the thyroiditis is secondary to acute infectious fevers may progress into a sclerotic condition and thus cause the disease.

Cachexia striumpriva is the condition caused by extirpation of the thyroid and give rise to the same manifestations as of myxedema. The cause of myxedema may extend over period of 10 or 15 years. The symptoms vary as to extent of involvement of the thyroid.

Up until the last ten or twelve years cretinism was looked upon and applied in a general sense to idiocy or defective mental development, depending upon local causes associated with deformity or arrested growth, and looked upon as a result of

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

local conditions and caused by reception of an undue amount of calarious matter into the system.

This has been proved a falacy and the cause is due to atrophy or loss of function of the thyroid gland in sporadic cases and to the absence in true form of cretinism. It is a condition rarely recognized before the sixth or seventh month, when it is noticed that the child does not develop as it should and mentally is not bright. Tongue and mouth large, skin oily and coarse, and hair dry and scant, and so develops until about the second year when the symptom of cretinism are marked.

In other cases or those termed sporadic, the child may normally develop until the fourth, fifth or sixth years, or later, the symptoms beginning with fever, followed by atrophy of the thyroid; characterized by mental decline and physical retardation and stunted growth, rarely reaching the height of five feet. Deformity occurs with limbs crooked, chest flattened, long bodied and lumbar lardosis, giving rise to appearance of protruding abdomen, hand flat and spade-like, nose large and flattened, and eye-lids swoollen, dribbling of saliva, skin dirty yellowish white and coarse and dry, puberty delayed sometimes to twenty-five years when menstruation is scanty and soon ceases, special senses poorly developed and temperature subnormal. Attacks occur in which they will set almost helpless for hours. As Maffers' says, "as if the soul had entirely left the body." All movements and actions, mental and physical, are slow. There are all grades of cretinism from those that can be taught simple duties down to complete idiocy.

Treatment of these conditions are those of thyroid extract, nutritious foods, general tonics, and hygienic measures. Under this treatment many, in fact, almost all have improved and some cured, where as without treatment they remain in this pitiable condition.

The Bedside Diagnosis of Typhoid Fever, With Special Reference to the Early Recognition of the Disease. *

By Chas. Z. Candler, M. D., Dillsboro, N. C.

Typhical typhoid fever manifests itself by such evident and characteristic symptoms that to speak of its differential diagnosis would seem almost superfluous. However, mistakes are often made, but these are, as a rule, during the early days of the disease, before the cardinal symptoms, as it were, make their appearance. It is the early recognition and the diagnosis of atypical

cases that baffle not only the young and inexperienced, but the old and experienced physician as well.

Delayed treatment affects in itself the life of one person, while the delayed recognition of the disease may affect many lives. This fact is manifested more particularly in private than in hospital practice. We know also that the earlier in a case we begin our treatment, the better the patient's chances for recovery. Therefore, the early recognition of the disease is of the utmost importance from the point of view of treatment. However, there is another important reason for endeavoring to ascertain as early as possible as to whether a patient is suffering from an attack of typhoid fever, and that is: as long as the malady is not identified there will be no steps taken towards the prevention of the spread of the disease to others. Think of the trouble that may arise from the so-called ambulant case, before his condition be diagnosed, if indeed it ever be diagnosed.

What then are the clinical symptoms of a case of typhoid fever in its early stage? It appears to me that the most important symptom is that of the temperature. Now, the height to which the temperature rises is in itself not diagnostic, it may be 99 deg. or it may be 104 or 105 deg. A person may go for days without any apparent discomfort, except perhaps loss of appetite, more or less headache, indisposition to any kind of mental work, with, in some cases a slight diarrhea, and yet have a more or less elevated temperature. I have in mind now the case of a young man (a barber) who consulted me for general malaise which had existed for several days, together with headache, bad dreams at night, and loss of appetite. In spite of this condition he had kept up his work in the "shop." His temperature was found to be 103.6 deg. Fahr. He was promptly put to bed, and went through a typical attack of typhoid fever. I have no doubt that had his temperature been taken a week prior to my first seeing him it would have been found above the normal. We are frequently consulted about just such cases. A man comes in with a pale face, a tired drawn expression, lack-luster eye, the pulse slightly accelerated, the tongue coated with a dirty white or yellowish fur, more pronounced in the center than at the sides. The red edges spoken of in the text books will not be seen at this stage. The skin may seem dry and hot, but this symptom depends upon the condition of the observers hand.

Given a case with a sustained temperature and that peculiar facial expression, *and I would specially impress that facial expression, together with other more or less*

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

obscure symptoms, would point strongly to typhoid.

We are compelled then to diagnose, clinically, by a system of exclusion. To some extent geographical limitations of the disease aid us in the diagnosis. There are, however, sections in which almost all diseases are mistaken for typhoid fever, and vice versa. Before going into a discussion of the specific diseases, let us take up the temperature and a few other special symptoms that seem to characterize typhoid.

The typical temperature of the text books is characterized by a series of regular step-like elevations, a remission of a degree or so in the morning, and an ascent of from one to two degrees in the evening, to reach the maximum about the fourth day. I am of the opinion that a large number of cases do not present this typical temperature chart, and that sometimes a temperature typical of typhoid fever may occur in other fevers. It has not been very long since physicians of eminence did not hesitate to be very emphatic in regard to the value of temperature as a diagnostic sign in typhoid fever. Sir William Aiken in his "Practice of Medicine" said: "A temperature of 104 deg. Fahr. on the second day is not typhoid fever, a temperature which is not above 102.5 deg. after the evening of the fourth day is not typhoid fever, and lastly, a patient after the first day whose temperature has been found normal once during the first week, is not a case of typhoid fever." This was written twenty years ago. I do not believe that one of these definite statements has ever been justified. Temperature then, of itself, is not a guide to the diagnosis of typhoid fever, although a typical chart is strong presumptive evidence of the disease. In fact any condition with a continuous fever, ascending or irregular, for four or five days is suspicious if no symptoms of other diseases are to be made out.

Diarrhœa.—This symptom was at one time looked upon as a cardinal symptom of typhoid fever. Now it is by no means so common. On the other hand it is rather the exception than the rule. The disease probably affects the intestines in one of two ways. It either causes undue irritability or it paralyzes. In one condition we have diarrhœa while in the other we have constipation.

Iliac Tenderness and Gurgling.—The iliac sign is a very unreliable one, as it may manifest itself in various other diseases. There is tenderness in some cases, though this will generally be found to be of a very indefinite nature. In some cases it is entirely absent, while in others it may be well marked. Gurgling in the right iliac fossa is present when there is much diarrhœa.

However, this sign can be elicited in nearly as large proportion of cases that are not typhoid; in fact, it can frequently be found in a state of health.

Spleen.—The spleen presents no abnormal symptoms in the early stages of the disease, though later on, during the second week, it becomes markedly enlarged.

Epistaxis.—Nose bleed frequently occurs, though in my experience it has been absent in about as many cases as it was present.

Eruption.—The eruption of typhoid fever makes its appearance, generally during the second week, on the abdomen as a rule, though it has occurred on other parts of the body. It consists of rose colored spots which vary in size and shape, and are characterized by disappearing on pressure to reappear when the pressure is removed. The existence of this eruption is diagnostic of typhoid, though its absence is not proof that the disease does not exist.

Tuberculosis.—As a systematic invasion, apart from pneumonia, may be mistaken for typhoid. Especially is this true among the negro population. In both affections there is a prodromal stage with anorexia, progressively increasing fever, cough and bronchitis, headache and delirium. The temperature curve in tuberculosis is very irregular, eruption is absent, epistaxis is not common, and enlargement of the spleen is less constant than in typhoid fever. It is claimed that the knee jerk is never absent in typhoid, while in tuberculosis it is variable—being present one day and absent the next. The diazo reaction of the urine, once supposed to be diagnostic of typhoid fever, may also be present in tuberculosis. Clinically, the disease is difficult to distinguish from typhoid with irregular temperature. The face will, as a rule, be flushed, in contrast to the pale drawn expression of typhoid. The tongue is more likely to be coated with a whitish fur, while in typhoid the tongue will be found covered with a brownish fur about the center, the red edges appearing as the disease progresses. By waiting a few days the diagnosis can be made, clinically, by the appearance of more marked typhoid symptoms.

Primary labor pneumonia is occasionally, though not commonly, mistaken for typhoid fever, as the sudden onset with a distinct chill, marked pulmonary symptoms, presence of herpes labialis, and the occurrence of the crisis from the fifth to the twelfth day, serve to distinguish the disease from typhoid.

Capillary or broncho-pneumonia is liable to be mistaken for typhoid, inasmuch as a capillary bronchitis is common in typhoid. But when due to the latter disease it is, as

a rule, not met with before the latter part of the second week.

Influenza.—In my own experience I have known influenza to be diagnosed typhoid in two instances. In some cases it may exhibit great prostration with early bronchitis and epistaxis, combined with sleeplessness, fever, and perhaps delirium. Generally the sudden onset, frontal headache, pain in eye-balls, rheumatoid, pains and sthenic fever, and the sudden disappearance of these urgent symptoms, together with absence of rose spots and enlarged spleen, serve to distinguish the disease. But typhoid fever may begin with pain in the eye-balls, more or less catarrh of the conjunctival mucous membrane together with other more or less atypical symptoms. Under these circumstances the best course to pursue is to wait.

Simple Continued Fever.—Pepper, in his "Theory and Practice of Medicine," says: "Simple continued fever may greatly resemble mild cases of typhoid fever. It is common to meet with patients who exhibit for a week or more, a fever of continued type for which no satisfactory cause can be discovered, and the exact nature of which must remain in doubt even after convalescence." The more abrupt onset, the absence of the characteristic temperature curve, the comparative infrequency of nervous or abdominal symptoms, of epistaxis, or splenic enlargement, tend to exclude typhoid fever in the diagnosis.

Meningitis.—Typhoid fever beginning with marked nervous symptoms (cerebro-spinal type) may readily be mistaken for meningitis. I have in mind the case of a girl, sixteen years of age, who was taken sick with a severe pain in the head, delirium, stiffness of the muscles of the neck, retraction of the head, muscular twitching and high fever. In the course of a few days typical rose colored spots occurred on the surface of the abdomen, the spleen became markedly enlarged, there was considerable tympanitic distention and some nose bleed. On the appearance of these symptoms, the headache, delirium and other nervous symptoms passed away, and so did my patient. I did not have an opportunity of seeing her during the early days of her illness, therefore, I am unable to say whether there were any typhoid symptoms, especially a gradually increasing fever, in the beginning. However, I was informed by the family that she had not been well for several days, having complained with a pain in her head, loss of appetite and lack of energy. In cerebro-spinal fever the onset is more abrupt, the pain in the head more intense, vomiting more common, while the abdomen is more apt to be retracted, epistaxis less common, enlargement

of the spleen less constant and herpes labialis more common than in typhoid fever.

Gastro-Intestinal Catarrh.—Again quoting Pepper: "Gastro-Intestinal Catarrh at times produces a group of symptoms highly suggestive of typhoid fever." However, there are some points by which we are enabled to distinguish the diseases. In acute gastritis we would find marked tenderness in the epigastric region and vomiting, a bright red tongue, sudden rise of temperature with a rapid pulse and diarrhœa with fetid stools. In gastritis there is usually more colicky pain than in typhoid fever. In some of these cases it is sometimes necessary to wait a week or more before a positive diagnosis can be made.

Dysentery.—It is not probable that dysentery would be mistaken for typhoid fever, inasmuch as the temperature would be found subnormal during the greater part of the day. The frequent and painful stools, and the location of the subjective pain—being low down in dysentery, while it would be more likely to exist in the umbilical region in typhoid, the absence of rose spots and enlargement of the spleen, would enable us to come to a correct conclusion as to the nature of the trouble.

Malaria.—There are several points of difference between these two diseases, some of which may be briefly mentioned: malarial fever is usually ushered in by a distinct chill, followed soon by high fever, typhoid by chilliness followed by a gradual rise of fever. The rapid pulse early in malaria is in marked contrast with the slow and often dicrotic pulse of typhoid. In malaria nausea and vomiting are common, with absence of other abdominal symptoms. The presence of the widal blood reaction would point to typhoid, while the detection of the plasmodium malarie in the blood by means of the microscope would be positive proof of the existence of malaria.

Septicæmia.—I have had no personal experience with this disease, but I should think the history of the case, the local trouble, intermittent fever accompanied by sweats, the absence of rose spots and widal reaction would establish the diagnosis.

Therefore, the combined symptoms which are present during the first week, and which may be relied upon for a presumptive diagnosis are: a daily increasing fever with headache and malaise, with or without nose bleed, a brownish furred tongue and a pulse of 80 or 90 with some degree of bronchial catarrh. If to these be added, during the second week the diazo urinary reaction, enlarged spleen, rose spots and the widal reaction, the diagnosis would be absolute.

The general conclusions, then, with

regard to the differential diagnosis of typhoid fever, clinically, are as follows:

1st. That the diagnosis of typhoid fever in the earliest stages of the disease presents probably greater difficulties than that of any other acute infectious disease.

2nd. That there is scarcely any disease accompanied by fever that has not been mistaken for typhoid fever.

3rd. That the disorders most likely to be mistaken for the disease in this country are: tuberculosis, pneumonia, influenza, malaria, simple continued fever, and catarrhal conditions of the gastro-intestinal tract.

I have omitted laboratory methods of diagnosis for the reason that a description of them would be too extensive for a paper like this. However, I would advise continued study along that line, for by the employment of such methods as are now at our command we are enabled to recognize diseased conditions, the existence of which, we have been heretofore, almost, if not entirely, in the dark. When possible every country practitioner should possess at least a microscope for, by its employment he may confirm a great many of his diagnoses.

In our mountain section of this State the people are becoming more familiar with sanitary laws, and as a result, the frequency of occurrence of typhoid fever is becoming less and less each year. The source of infection of every native case can usually be traced to an infected water supply. It is well known that the most of our population depend upon springs for the supply of their drinking water, and that the drinking water of our section is unsurpassed. Occasionally a family will become lax in sanitary matters, build a pig sty so that it will drain towards the spring, or do some other equally unsanitary act, with typhoid as a result. In a paper entitled "An Unappreciated Source of Typhoid Infection," read at the meeting of the Medical Society of Virginia, at Roanoke, by Dr. P. B. Barringer, he calls special attention to the infection of railroad beds as a factor in the spread of typhoid. He claims that the road-bed becomes infected through the discharge of typhoid patients travelling over the road while in the infective stage. The proof he offers in support of this theory, as a means of infection, is very plausible. I regard his paper as a valuable contribution and think it should call for more extensive study along this line. Dr. Barringer is a son of North Carolina, now the distinguished Professor of Medicine in the University of Virginia.

The preparations of "Pepsin," made by Robinson-Pettet Co., are endorsed by many prominent physicians. We recommend a careful perusal of the advertisement of this well-known manufacturing house. Page vii.

Diphtheria. *

By J. A. Williams, M. D., Reidsville, N. C.

My object in bringing this subject before you in annual debate is: That it may be discussed freely, each giving his experience in a practical way, and thereby help some or all of us in decreasing the mortality statistics of this great scourge of childhood.

Diphtheria is derived from the Greek word meaning a skin or membrane. It is an acute, specific and constitutional disease; being both contagious and epidemic. It usually begins by an effection of the throat; characterized by local exudation, glandular enlargement, more or less febrile reaction, prostration of vital powers, and frequently causing more or less paralysis of various parts of the body.

Cause.—The chief and exciting cause of this disease is: A specific micro-organism known as Klebs-Löffler's bacillus, which in its action generates a poisonous toxic substance called toxalbumin, the absorption of which causes the disease and not the germ itself. This specific micro organism is found in the excretions, exudes and saliva; capable of being exhaled, thus contaminating the air, clothing, bedding, furniture, and whatever else may be contained in the room.

The Predisposing Cause.—It is chiefly a disease of childhood, though not always confined to them, as the adult may often be afflicted. All bad hygienic surroundings, nasal, pharyngeal and laryngeal catarrh promote its growth. Associated with the bacillus of diphtheria are frequently found other pathogenic bacteria; the streptococcus pyogenes and the staphylococcus pyogenes aureus, the former of which occurs more frequently.

Pathology.—The pathology of this disease is interesting because it is essential in making a diagnosis. The throat is red, containing spots or almost covered entirely with a greyish membrane consisting of epithelial cells and leucocytes, which are granular and entangled in a net work of fibrin. This being formed by the action of the germ on the surrounding tissue, causing coagulation necrosis and exudation of fibrin entangled in the meshes of which may be found the bacillus of diphtheria, as well as the germs of suppuration. This membrane may extend into the nose or larynx. It is characterized by being embedded in the substance of the mucous membrane, so that when being pulled or mopped off, leaves a bleeding surface. Its natural mode of removal being by absorption, suppuration or gangrene. The muscular system, the heart, kidneys and liver undergo more or less al-

*Read before the recent meeting of the North Carolina Medical Society, at Raleigh.

buminoid and less often fatty degeneration. The spleen and glands of the neck are enlarged. The brain and nervous system are frequently involved and neuritis often produced by these toxic substances.

Symptoms.—The symptoms are rarely typical, but vary both in intensity and character. The onset may be mild, commencing with rigors, with but little fever, stiffness of the muscles of the neck, slight sore throat, headache, languor and but small amount of exudation of membrane. Or the invasion may be more abrupt, beginning with a chill, temperature of 103 to 105, quick pulse, severe sore throat, stiffness and swelling of the glands of the neck, coated tongue, loss of appetite, loss of strength and prostration, the bowels being slightly constipated or tendency to diarrhœa. The urine is scant, high colored and contains albumin. On inspecting the throat you will find it red, swollen and containing a greyish membrane often covering the tonsil and uvula as well. The patient complains of the throat being dry, with constant desire to hawk and frequently spitting up pieces of membrane with ulcerated tissue, giving an offensive odor. If there is extension into the nose there will be an offensive discharge from this cavity, often epistaxis and frequent excoriation of the upper lip. Extension into the larynx is indicated by hoarseness, croupy cough, noisy and stridulous breathing, and dyspnœa. Dyspnœa is so severe and spasmodic at times that the child will be cyanosed and die from like of oxidation unless immediately relieved. The disease lasts from ten to fourteen days unless there is prolapse.

Sequæ.—In severe cases the patient is often left coæctetic and anæmic with various paralysis, pharyngeal being the most common and often occurs in mild cases. Paralysis of the heart and syncope is not infrequent with fatal results. Strabismus, hæmiplegia and paraplegia may also occur.

Diagnosis.—The diagnosis and treatment is of most importance to the general practitioner. But with the modern facilities for microscopical and laboratory work, the diagnosis has been made much easier than in former years. The finding of the diphtheria bacillus, together with the history and symptoms as given above will make the diagnosis complete. I will say, however, that the finding of Klebs Löffler's bacillus alone in the throat without local or constitutional symptoms does not always make a diagnosis of diphtheria. My experience in the New York Infant Asylum in 1897 in an epidemic of diphtheria, out of the examination of the throats of four hundred (400) children twice a week, we frequently found the bacillus without any further de-

velopment of symptoms whatever, either local or constitutional. The best means of obtaining a culture for examination for practical purposes is: A sterilized test tube containing Löffler's blood serum or agar-agar to the depth of about two inches. Then with a sterilized steel swab (wrapped at the end with a small piece of cotton) mop the throat and insert this end of the wire into the media of serum or agar and plug the tube with a piece of sterilized cotton. This is then placed in an oven and kept at the body temperature for twelve to twenty-four hours. The culture can well be seen in the media around the end of the swab. With a sterilized needle smear some of this on a cover-slip and passing it several times through an alcohol flame to fix it—stain one-half minute with watery solution of methylene blue, wash it off well with sterilized water and by the (use of an oil) emersion lense examine under a microscope and you can readily discover the bacillus. However, unless one is expert in this examination and familiar with the use of the microscope he may mistake other micro-organisms for this. I would, therefore, suggest that he send his specimen to the State Biologist, who could make the proper culture and give a diagnosis within twenty-four hours. This I think should be highly endorsed as he is more expert, better prepared, giving his whole time and attention to such work.

With the presence of the diphtheria bacillus it is easily diagnosed from follicular tonsillitis by slight or absent systemic symptoms, absence of glandular enlargement of the neck and by ulceration being limited to the follicles of the tonsil. From scarlet fever by the presence of scarlatine eruption and absence of membrane. From croup by the constitutional symptoms and seat of the disease. In diphtheria the pharynx is usually the chief seat and beginning of the disease, while in croup the larynx is the chief seat of the disease. In diphtheria of the larynx the symptoms are chiefly those of mechanical obstruction. Diphtheria is highly contagious and epidemic; croup occurs spasmodically and not contagious. In diphtheria the temperature usually begins to decline after the third or fifth day, while in croup it remains high in proportion to the mechanical obstruction. The urine in the former contains albumin and not in the latter.

Prognosis.—The prognosis in mild cases is favorable. If accompanied with high fever an exudate spreading into the nose and larynx, with hemorrhages, glandular enlargement, large amount of albumin in the urine, rapid, feeble pulse, the diagnosis should be *grave*.

Treatment.—The treatment in order to simplify I will divide in: 1. Prophylactic. 2. Serum. 3. Constitutional. 4. Local.

I. Prophylactic.—As soon as the patient is seen even in suspected cases, before the diagnosis is clear, should be isolated and passing in and out of the room prevented. The physician himself should use every means to prevent the spread of the disease. A gown to protect his clothing and a cap should be worn which can be removed on leaving the room to protect others with whom he may come in contact. This I am sorry to say is not always adhered to by the profession, and they are often responsible for the infection of others.

II. Serum.—The antitoxine treatment of diphtheria has ceased to be an experiment, and is now an acknowledged fact by the majority of the profession. In my opinion it is one of the most wonderful discoveries made in the medical profession during the past century. While in the minds of some there is still a doubt as to its efficacy, this I think is due to the fact that the dose was too small to get the proper physiological effect, being given in from five hundred (500) to one thousand (1000) units. This will usually be sufficient as a prophylactic but not as a curative. In mild cases I give from one to two thousand units (injected in the subcutaneous areolar tissue, preferably on the inner side of the thigh) to be repeated within twelve to twenty-four hours unless there is considerable improvement in the patient. The number of units used should be in proportion to the severity of the case. In severe cases from two to four thousand units, to be repeated within twenty-four hours. The English physicians have demonstrated the fact that severe epidemics demand heroic treatment and have given six, ten and even twenty thousand units within twenty-four hours with gratifying results. Gidney in concluding an article on diphtheria says, "There is little fear of administering an over-dose." In English hospitals it has been thoroughly demonstrated that by the use of large doses of anti-toxine administered in the early stage (second or third day) of the disease has reduced the mortality to two and one-half per cent. If both the laity and the physician would do their duty, the laity in sending for the physician early, the physician by careful examination and the early use of antitoxine, will in my opinion reduce the death rate even a great deal below this. With the proper use of serum therapy in the early stages, there will be but little need for local or constitutional treatment. However, a certain amount of such treatment is necessary.

III. Constitutional.—I usually begin by

giving small broken doses of calomel every hour or two until the bowels move thoroughly. The patient is put on the most nutritious liquid diet, such as milk, beef-peptinoids, egg albumin, broths, kunyssa, etc. The diet should be given at regular intervals of from two to three hours, as nutrition is essential in sustaining vital powers. This being a very depressing disease I think it advisable to use stimulants early, before exhaustion and prostration occurs. In my opinion there is no stimulant, which acts quite so well as whiskey and strychnine; whiskey in from thirty minims to one-half an ounce every three or four hours acts most charmingly. Nothing will support the heart and tone up the general nervous system like strychnine every six to eight hours as indicated. To reduce the temperature I always use the sponge bath, one-third to one-half alcohol in water and sponge the patient as often as is necessary to keep the temperature down. I am opposed to the use of coal tar products, as they are all more or less depressing to the heart, which now needs support. An ice cap may be placed on the head, as this not only aids in reducing the temperature, but prevents brain complications. Given internally the tincture of iron in combination with quinine may be used throughout the attack with great benefit. In some cases of laryngeal diphtheria the inhalation of steam or unslacked lime will often give relief.

Local Treatment.—The chief aim in local treatment is to prevent or limit the action of the bacillus. The throat should be kept clean by the use of listerine or borolyptol as a frequent gargle, and mopping the throat every two or three hours with a 50% solution of peroxide.

The following prescription I find very valuable:

Tincture of Iron $\frac{1}{2}$ to 1 drachm.

Acid Carbolic 5 to 10 minims.

Chlorate Potash $\frac{1}{2}$ to 1 drachm.

Glycerine $\frac{1}{2}$ ounce.

Sig. Aquæ Q. S. to 2 ounces.

Teaspoonful. Gargle and swallow every three or four hours not allowing any liquids to be taken afterwards for some time. If the nose is involved this cavity may be frequently irrigated with weak saline solution and the following spray used:

Carbolic Acid 8 minims.

Menthol

Eucalyptol aa 1 to 2 per cent.

Sig. Liq. Alboline Q. S. 2 ounces.

Spray nose and throat every three or four hours. In case there is extension into the larynx, the same general treatment with the above spray can be used. Inhalations of steam or fumes of unslacked lime is beneficial, being directed by a funnel or

placed under the sheet. In case these means fail intubation or trachæotomy must be resorted to. For the purpose of intubation every physician should have an intubation set as it will well pay for itself in his first case. It is much more preferable to trachæotomy, being easier to perform, requiring less after treatment and more readily submitted to by patients and parents.

After Treatment.—The after treatment consists in complete disinfection. The clothing of the patient should be changed after giving a bath and the patient changed into another room. Everything that can should be boiled, preferably in a two per cent. carbolic solution. Everything else should be left in the room and the room then made air tight by plugging all crevices with paper. The formaldehyde gas is then pumped into the room through the key-hole for one or two hours and left for twenty-four. After this the doors and windows should be opened and the room scoured and washed. This should be left open and unoccupied for several days. If you have not the means for using formaldehyde gas then sulphur about four pounds to 1000 cubic feet should be burned by placing the sulphur in a basin surrounded with water, leaving the room closed for twenty-four hours and then thoroughly washed. If the prophylactic treatment is carried out by keeping all who have been exposed at home for ten to twelve days and giving them injections of from 500 to 1000 units of antitoxine, together with thorough disinfection afterwards with formaldehyde gas, there will be comparatively little danger of the disease spreading and diphtheria epidemics greatly lessened.

Ununited Fractures. *

By Stuart McGuire, M. D., Surgeon in Charge
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A generation or two ago writers of popular literature alluded to doctors as "bone setters." To-day they are referred to as pathologists, neurologists, or gynecologists. A generation ago the leading surgeons of the country were famous for their ability to set a fracture—to-day they are better known for their ability to set a fee.

The enormous increase in medical knowledge, the limitation of study to special lines, the fascination of modern aseptic and antiseptic surgery, the striving after the new and original to the neglect of the old and established, have led me to the sad but inevitable conclusion that the average surgeon of to-day is not as competent to treat an ordinary fracture as were his forefathers.

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

In our medical schools enthusiastic professors teach microscopic technique, serum therapy and the indications for opening the abdomen in obscure diseases, and the student is either referred to his text-book, or turned over to an assistant, for instruction in the diagnosis and treatment of fracture. In our medical society papers are read and discussed, the mosquito theory of malarial infection, the methods of catheterizing the ureters, and the choice between the perineal and suprapubic routes in prostatectomy, to the exclusion of any but a rare reference to the many important points concerning the reduction and immobilization of a fracture.

I plead guilty as a teacher and writer to having done my part in bringing about this condition of affairs. In fact, the recognition of my own deficient knowledge of "bone setting" has made me determine to give the subject closer study, and has led me to make this plea for the better education of students and the more thoughtful attention of practitioners to what, if I am not unduly pessimistic, threatens to become one of the lost arts.

Babies are born and bones are broken in every community, and while specialists in large cities may formulate and teach principles for the management of such cases, it is to the general practitioner that the public still looks for deliverance in labor and first aid to the injured.

If lack of study and hence lack of skill shall lead to poor results at the hands of the local attendant, the laity will soon learn to transport fracture cases to the cities, and the country doctor will be responsible for the creation of an additional specialist to the number which already encroaches upon his practice.

With few exceptions a broken bone properly set and splinted will heal, and the increasing number of cases of ununited fracture that come to a surgeon doing referred practice is a clear index of the lack of knowledge possessed by the average doctor with regard to fracture.

I claim no personal exemption from my own condemnation, for I am free to confess that I respond to every call to set a broken bone with reluctance, and leave the case with misgivings, and I know, from the confidence with which I undertake other work of greater responsibility, that my timidity comes from ignorance.

Public criticism is frequently withheld when a surgical blunder is committed in the abdomen, but it is sharp and relentless when it is apparent in an extremity. A man who dies after an operation is buried and soon forgotten, but the man who had a deformed arm or shortened leg from a badly

treated fracture, lives for a generation a walking or limping advertisement to his community of surgical limitation or incapacity. Let us, therefore, study fractures more in order that we may treat them better; if not for the sake of our patients, then for the sake of our profession.

But little has been learned and much has been forgotten in regard to the immediate treatment of simple fractures since the publication of the classical work of Malgaigne more than fifty years ago, and as this and other books are accessible to the profession, I will limit my paper to a brief review of what has been accomplished, and what remains to be done, in the treatment of a special class of cases commonly called ununited fractures.

When a bone fails to unite after being immobilized for a certain length of time, the condition is spoken of as either delayed-union or non-union.

Delayed-union is where reparative action is present, but owing to lack of nutritive vigor, callus is either tardy in development or imperfect in its transformation. Improvement of the general health, the establishment of a more perfect local circulation, or the irritation of the seat of injury by forcibly rubbing the fragments together may stimulate the halting process and finally result in solid union.

Non union is where reparative action is absent, from local or constitutional causes, and the result is either a ligamentous union or the formation of a false joint. The ends of the bones round off, the medullary cavities become closed and the blood supply to the part is diminished. There is always abnormal mobility, often displacement of the fragments and sometimes absorption of the bone.

The division of ununited fractures into delayed-union or non-union is based on the fact that cases in the first class can be cured without an operation, by making more active the reparative forces already in existence by means of constitutional and local treatment, while cases in the second class cannot be cured except by an operation which freshens the rounded ends of the bones, opens up their medullary cavities and changes the existing passivity to the activity of a recent fracture. Unfortunately this prognostic distinction cannot always be made clinically, and usually the surgeon when called to treat a case of ununited fracture, deals with it at first by non-operative measures with the hope that union may simply be delayed, and should his efforts prove unsuccessful, he operates on it later under the conviction that it is a case of non-union not amenable to less heroic measures.

As delayed-union and non-union cannot be differentiated except by the ultimate result in the individual case, it is not only practical but proper to discuss them jointly. Here, as elsewhere, it is necessary to consider the causes which, singly or combined, result in the condition, for by their early anticipation and prevention, or later by their recognition and correction much time and suffering may be spared the patient.

The causes of delayed-union or non-union of a fracture are usually classified under the heads of general and local. Under the first, authorities give a long list of constitutional conditions or diseases; such as age, pregnancy, lactation, acute infectious diseases, starvation, loss of blood, rickets, marasmus and syphilis. All except the last are of doubtful influence, for it is a strange but authenticated fact that failure of a fracture to undergo proper ossification is more apt to be observed in a vigorous adult than in the debilitated, the marasmic or the aged. While it is true that syphilis and fractures are both so common that they must often co-exist without detrimental influence one on the other, still in my personal observation patients with delayed-union have responded so often and so promptly to anti-syphilitic treatment that it is now my practice to prescribe iodide of potash in such cases as the first effort to secure union, and this whether any history of specific infection can be obtained or not. If it does no good it does no harm, and as we all know syphilis, like accidents, is likely to occur in the best regulated families, and patients suffering with the disease are sometimes ignorant of their condition or untrustworthy in their statements.

Under the local causes of delayed-union or non-union may be mentioned: 1. Marked displacement or wide separation of the fragments. 2. Interposition of muscle, fascia or foreign bodies between the fragments. 3. Defective nutrition through faulty innervation or deficient blood supply. 4. Infection and suppuration, destroying or preventing the formation of callus. 5. Defective immobilization or premature passive motion. In fact any defect in the primary treatment of a fracture, such as failure to effect accurate reduction, or to secure proper immobilization. Too tight bandages, undue pressure of splints, frequent removal of the dressings for the purpose of inspection, and finally permitting the patient to use the limb too soon on account of the unfounded fear that prolonged fixation endangers the function of an adjacent joint.

When a surgeon takes charge of a case of ununited fracture his first attention should be directed to the general health of the patient. An examination of the urine should

be made; errors of digestion should be detected and corrected; anemia and debility should be combatted, and the system gotten in the best possible condition. If the case is not over a year's standing iodide of potash should be administered unless the drug has already been tried without result.

The local treatment should be based largely on the result of an X-ray examination. In some cases it will appear probable that the patient can be cured without subjecting him to an operation; in other cases it will at once be obvious that nothing short of bloody surgery will prove effective, and it will be a waste of time to try milder measures. The following is a brief summary of local methods that have been advised, each of which will prove of service in properly selected cases: 1. Light elastic constriction above the knee, the fracture producing more or less hyperemia. 2. Active use of the limb encased in an immobilizing dressing of plaster of paris. 3. Percussion of the limb by the surgeon with a rubber mallet, or by instructing the patient to strike his heel on the floor, if the fracture be in the lower extremity, or pound the hand or elbow on a table if it be in the upper. 4. Injection of from three to ten drops of a 10% solution of chloride of zinc between the ends of the fragments by means of a hypodermic syringe. 5. Administration of an anesthetic and forcibly tearing loose fibrous adhesions, effecting accurate apposition and treating as a recent fracture. 6. Subcutaneous drilling of the ends of the fragments, the perforations opening up medullary space and the small particles of bone detached acting as a stimulus to plastic repair. 7. Resection of the ends of the bones by an operation, and accurate adjustment of their freshened surfaces, and the maintenance of the fragments in the correct position by means of sutures, nails, medullary splints or bone ferules, all reinforced, of course, by a rigid external dressing which immobilizes the two adjacent joints.

Time does not permit me to discuss several interesting points in the technique of this operation or to describe many ingenious methods that have been devised to make it one of the most successful and satisfactory in surgery. I, therefore, content myself with the exhibition of skiagraphs of three of my cases.

The first was a case of a gunshot fracture of the upper end of the humerus, attended by loss of one or two inches of the shaft of the bone. Suppuration prevented callus formation. The ends of the fragments were exposed, squared with a saw, and the revived surfaces united with a silver wire suture. Subsequent immobilization was secured by rest in bed with sandbags on

each side of the arm, and extension from the elbow by means of a modified Buck's apparatus. In the photograph the line of union can only be detected by the location of the silver wire suture.

The second case was that of a man who fractured his patella by muscular violence. He was treated by his physician and good union apparently resulted. He was allowed to get up too soon, however, and by a slight fall widely separated the fragments. Believing that the condition justified an operation I opened and washed out the joint, freshened the bony surfaces and sutured them together with chromicized catgut. The operation was done three months ago and the function of the joint is perfect.

The third case was a fracture of both ulna and radius just above the wrist. The man came to me six weeks after the accident and I found there was no union, owing to overlapping of the fragments from failure on the part of the attendant either to effect or maintain reduction. Muscular contraction was such that I was unable to correct the displacement, so I exposed the ends of the bones through a posterior incision, resected and drilled them and united them by catgut sutures. One photograph shows the arm immediately before the operation, the other shows it two weeks afterwards, when the dressings were removed to inspect the wound. The case is still in splints and it is too early to report final results.

Despite the success that has followed the treatment of ununited fractures since the introduction of aseptic and antiseptic surgery there still remains one fracture that up to this time gives as poor results as it did a century ago, namely, fracture of the neck of the femur. For a time it was believed that failure to secure bony union was due to some unusual pathologic condition resulting in failure of callus to form in sufficient quantity to effect repair, but now it is known that the defect is due to failure of known mechanical methods to secure accurate approximation and to maintain adequate immobilization of the fragments.

The argument that in intra-capsular fracture of the femur the upper fragment has not sufficient blood supply to maintain vitality, much less to produce callus, is controverted by the following facts:

1. Completely detached fragments of bone at other localities, such as a disk removed by the trephine, take an active part in reparative action,

2. Post-mortem examinations in cases of intra-capsular fracture show that the upper fragment not only maintains its vitality but in a majority of cases exhibits evidence of callus formation.

3. In cases of intra-capsular fracture

where impaction has taken place, bony union will almost invariably result if the fragments are permitted to remain in apposition for a sufficient time.

4. In experimental cases of intra-capsular fracture produced on lower animals, bony union was the rule when the fragments were held in position by direct fixation with a nail or screw, while in the control cases not treated no union except of a ligamentous nature was ever observed.

Writers no longer lay stress in fractures of the hip on the division into intra-capsular and extra-capsular fractures, but strongly urge the importance of distinguishing between a non-impacted and an impacted fracture. An impacted fracture of the neck of the femur is considered the best setting of the bony fragments that a surgeon can obtain, and practitioners are urged not to try to elicit crepitus in doubtful cases, but to rely for diagnosis of the nature of the injury on the shortening and eversion of the limb, the change in posture of the trochanter major, and the loss of tension of the fascia lata between the trochanter and the crest of the ileum. Post says, "better an imperfect diagnosis for the surgeon and a perfect limb for the patient than a perfect diagnosis for the surgeon and an imperfect limb for the patient."

Much more could be written but I trust I have said enough to convince you that failure to secure bony union after intra-capsular fracture of the neck of the femur is not due to any peculiar lack of reparative power of the part, but to ignorance of efficient means to effect reduction and maintain apposition of the fragments. In other words, the bad results that follow the injury are not due to any fault of nature but to absence of efficient methods of treatment.

Buck's extension apparatus in the original form, or modified by counter or lateral traction, rarely if ever secures a good result. Senn's method of manual reduction and fixation by the application of a plaster paris dressing, with a padded screw incorporated for making lateral pressure against the trochanter, is of doubtful value in the hands of the average practitioner. An open, or subcutaneous operation for the direct fixation of the fragments by suture, nails, or screws, is applicable to but few cases, as the injury usually occurs in the feeble and aged who are but poor subjects for surgery.

The problem of how to treat successfully cases of unimpacted fracture of the neck of the femur is a difficult one, and has not yet been solved. That it will finally be satisfactorily settled I do not doubt. Congenital dislocation of the hip is rare, and few men ever have an opportunity to diagnosticate a case. Senile fracture of the hip is common,

and all of us are frequently called on to treat such cases. The deformity of youth is distressing, but the suffering and helplessness of old age are even more appealing to our sympathies. May this Society have the honor of producing a man who some day will accomplish a work greater than that that ever aspired to by the distinguished Lorentz.

Prostatic Abscess--Prerectal Curvilinear Incision.

Ransohoff (*Annals of Surgery*) Regarding the diagnosis of prostatic abscess, when the condition is first suspected there is but little difficulty. At times, however, the diagnosis is not made until invasion of the rectovesical fascia has taken place. This very invasion decreases the value of the rectal touch for accurately determining the condition of the prostate gland. When once the finger feels a soft, indentable, fluctuating spot underneath the rectal mucosa, it can no longer be determined to what extent the suppuration is intra or periprostatic. Furthermore, the value of the rectal touch is diminished in the abscess complicating prostatic hypertrophy. Fortunately this is counterbalanced by the prominence of other signs, notably the intermittent urethral discharge, which makes the recognition of the secondary infection relatively simple.

A very large proportion of prostatic abscesses if untreated open into both rectum urethra (twenty-one out of sixty-seven). Such cases are either rapidly fatal, or if recovery ensues, leave urethro-rectal fistulæ that are often beyond relief. A dominant factor in determining the method of attacking a prostatic abscess must always be the relation this bears to the urethra. In 55 out of 115 cases the abscess opened spontaneously into the urethra or was opened by the beak of a passing instrument. How frequently the urethral drainage of even these superficial abscesses is insufficient is manifested by the chronicity of the discharge and the recurrence of retention symptoms.

Whatever the primary source of their infection, deep-seated prostatic abscesses develop within the gland substance without entangling alliances with either urethra or rectum, although with the growth of the abscess there is a tendency to open into either channel in the order given. The direct inference is to go in between urethra and rectum.

He reports the case of a young man of twenty-four, well nourished, cholecystotomy was first performed, and later prostatic abscess was diagnosed. A prerectal curvilinear incision was made, beginning near

the tuber ischii of the right side, curving around and within an inch of the anal orifice to the same point on the left side. A staff was not used. After the division of the superficial fascia, with a few fibers from the external sphincter to the bulbocavernosus, the bulb of the corpus spongiosum and the transverse perineal muscles were readily exposed and drawn forward with a blunt extractor. The rectum was then drawn backward, and in the depths of the wound the fibers of the levator ani and the compressor urethra were held aside after blunt dissection. By this blunt and almost bloodless dissection the rectum was easily separated from the posterior surface of the prostate gland. The urethra was not opened. With an aspirating needle the abscess within the gland was easily located. It was opened through a median posterior incision. Vent was thus given to about one ounce of thick, creamy pus. The examination of this later showed the Neisser diplococcus and the staphylococcus. A small drainage-tube was inserted into the abscess cavity, and the large wound, which had somewhat the appearance of the vagina, was readily closed with three silkwormgut sutures on each side of the middle line. The hemorrhage during the operation was almost *nil*. The patient became entirely well.

One valid but slight objection has been urged to the prerectal incision. It was encountered in the second case—sloughing of the anterior wall followed by a fistula. When large prostates are to be removed, this danger would be somewhat greater, but by adhering closely to the prostatic capsule and guiding the cleavage away from the rectum, this danger will be minimized. The advantages of the method of operation fully outweigh this possible, though not probable, wound complication.

Various methods have been devised for bringing the prostate into the perineal wound, but this can be accomplished as well with a short-beaked stone-searcher. This, firmly depressed, can be made to bring the prostate within easy access.

Various modifications of the prerectal operation have been made, all making for greater room for operative work. In the operation for prostatic abscess, the prerectal incision alone will suffice. For the major operation of prostatectomy, an incision made from the right extremity of the initial cut into the ischiorectal fossa and carried around the right side of the anus toward the coccyx affords an abundance of room for the thorough isolation of the prostate before its removal is begun. This operation, devised by Gosset and Proust, permits the operator to displace the rectum backward and to the left. As performed on the

cadaver it appeared to Ransohoff to be ideal.

Treatment of Arteriosclerosis.

Huchard (*Medical Press and Circular*) recommends the following plan of treatment: In regard to hygiene and alimentary regimen he believes that a milk diet should form an important part of alimentation, while certain exciting liquids should be suppressed—tea, coffee, liquors of every kind—and also food containing more or less ptomaines, such as fish, game, pork, and tinned meat. All liquids should be moderate in amount, and just sufficient for the needs of the organism, otherwise they produce a kind of vascular plethora which is certain to provoke arterial hypertension. This strict regimen should be absolutely imposed on all patients suffering from a gouty or rheumatic diathesis. While prescribing the above regimen it is well to have recourse to intestinal antiseptics—naphthol, benzonaphthol, charcoal; but the best antiseptics of the intestine is combined with evacuation of its contents. The patients should consequently avoid constipation. The medical treatment proper is limited to three or four drugs, but they render good service, as they produce more or less rapidly vasodilatation, followed by lowering of the arterial tension. Among these may be mentioned nitroglycerin and iodide of potassium or sodium, the latter constituting the treatment *par excellence* in small continued doses. He suggests the following preparation:

R Tincture of grindelia robusta, f3j;
Tincture of convallaria majalis, f3ijss;
Tincture of squills, f3j.

Fifteen drops three times a day in water.

Dyspnea being one of the essential signs of arteriosclerosis, especially that to which has been given the name of toxic dyspnea, of alimentary origin, for this he institutes the following regimen during six months or a year:

1. For eight days absolute milk diet, three quarts daily.

2. During the following eight days (and so every month during the whole period) mixed diet: eggs, fruits, grapes, a small quantity meal once a day and never in the evening.

3. Suppression of game, cheese, tea, alcohol, tobacco.

4. A slight purgative now and again.

5. During the period of mixed diet two or three wafers of ten grains of theobromine.

6. During the period of purely milk diet iodide of potassium.

7. In case of cardiac insufficiency moderate doses of digitalis.

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THE COUNTY SOCIETIES AGAIN.

That there is a fertile field for work by the county medical societies in North Carolina under the plan of organization adopted by the State Medical Society at Hot Springs, 1903, no one who has carefully studied the needs of the profession in a local way will deny. Too great stress cannot be laid on the improvement in the fraternal relations of the different members of the profession in counties where the societies meet regularly and frequently. With the discussion of some topic of medical interest at each meeting comes an impetus to study, to the buying of more books—a fact already taken note of by more than one medical book canvasser in this State—to the reading of more journals and better journals, to the giving of more attention to the technical side of medicine. That great results will come of the efforts on these lines, we all believe, and that an improvement in the rank and file of the profession growing out of the contact with the other members of the county profession, each month, in a way calculated to elicit the exactness of each man's knowledge of a given medical topic, is already apparent in many of the counties in this State. As to the future influence of the county societies on the profession at large, it is of interest to note that in the counties which were unorganized at the time of the annual meeting of the State Society in Raleigh last May, the majority of them have already organized and filed reports with the officers of the State Society. This we take as a pleasant suggestion that the doctors throughout the State have fully considered the matter and arrived at the conclusion that organization is good for us all. The State Auditor reported 1278 doctors in North Carolina as having paid "doctor's tax for the year ending May 31st, 1904." The Secretary of the State Society advises there are now enrolled on his record of members of the component county medical societies of the State Medical Society in the neighborhood of 1100 members—certainly a showing alike gratifying to those who had confidence in the new constitution and those who believed the time had come for the North Carolina doctor of the country districts and the smaller towns to have a social professional contact with his fellows once in a while, as well as the men who live in the cities. If the meeting of local medical societies was good for the latter, it was equally to be hoped to bring good re-

sults when the privileges of medical society membership was brought to the doors of the former. After all it is the country doctor in North Carolina who bears the brunt and burden of the day. It is he who has the long hard rides over frozen and muddy roads; it is he who has the experiences and the responsibilities which unaided and alone he must bear to the salvation of human life and relief of mortal suffering; it is he who face to face with emergencies must act alone and without the aid of consultation; it is he who must exercise positive genius every month of his life and does in the adapting of remedial measures and devising of surgical means which are not laid down in the text-books. Aye, it is he on whom the glory and renown of the North Carolina physician will rest for its place in the temple of fame! But there is yet another side of work for the county medical societies, and that is in the securing of the prosecution of illegal practitioners of medicine. Notwithstanding the decision of the Supreme Court seemingly was adverse to what we had cherished as a proper construction of the medical laws of this State, the fact yet remains that the conviction of one practicing medicine in North Carolina can be readily secured by establishing the fact of such practice by the administering of drugs or performing of surgical operation and the receiving of pay therefor.

In comparatively a minor portion of the infractions of the statute could the plea on which Biggs was acquitted be maintained, for certainly there will never be much practicing of medicine without the use of medicines or performing of the operations of surgery. Before the organization of the county societies, if any notice was taken of illegal practitioners, it was as a rule, often solely on the instance of some other physician who ran the risk of having the fact he had offered the solicitor the evidence, used to his own detriment in the community. But with the successful operation of the county society, there is no reason why the secretary of the county society may not upon the order of the society, officially act in such cases and aid in securing convictions of offenders. In reporting offenders no class distinctions should be observed. The opulent gentleman who visits the resort town and stopping in the hotel for his health a few weeks only, allows it to be reported that he "has an enormous practice in the distant city of 'X,'" "is away for his own health and does not care for practice," but does "consent under great pressure to see a few cases," and is "very sorry, but as I am not registered in North Carolina, I, of course, cannot think of charging you; but at home my fee is \$—." This

genius of the profession is becoming rather frequent in the resort towns of Carolina, both in the eastern and the western resorts, and he should be learned a lesson at the hands of the local profession, whose unfair competitor he so often becomes. It is chiefly from this traveling medical genius, who spends his seasons passing from one resort town to another, meanwhile posing as a "most eminent gentleman" from some distant city, that we heard so plaintive a wail a few years ago for "reciprocity in medical licensure"—a wail of which we happily hear little the past year or two and of which I predict we shall hear less in the next few years, for the masses of our profession have no interest in it whatever and the greatest good to the greatest number should obtain in this as in other things in a democracy.

The County Medical Society of Madison county has recently employed an attorney to secure the prosecution of every illegal practitioner in the county, and we herald this action as a movement worthy of imitation throughout the State. In New York county the society's attorney looks after the offenders of the medical practice act, and we see no reason why each county society cannot have some one who will represent the society and secure prompt prosecutions of all practicing without legal registration.

THE MONEY WASTE OF TYPHOID FEVER.

Dr. Vaughan of the University of Michigan, in a recent address entitled "Water Supply of Cities," says:

"There die in this country every year from typhoid fever alone not less than fifty thousand people. There are sick in this country not less than five hundred thousand people from the same cause. To get down to dollars and cents, which is the American way of figuring everything, say that the average human life is worth a thousand dollars. Then with fifty thousand deaths from this disease, we are losing by death alone fifty millions of dollars. But there are five hundred thousand people sick. Then we will say that the time of each one of these individuals is worth a dollar a day. Besides that there must be at least one nurse, and we will suppose that these services are worth one dollar a day. Then for each day that those five hundred thousand people are sick, the people of the United States are paying one million dollars. And forty days is certainly an average duration for typhoid fever. Then with this forty millions and the fifty millions lost by death, it is interesting to note that the people of the United States are paying a tribute of ninety million dollars to our ignorance for the existence of a disease which, if every man did his duty, would not exist at all."

In these few words Dr. Vaughan has clearly and forcibly stated facts concerning the prevalence of typhoid fever and its cost to the country. To lessen the cause of typhoid fever is more difficult than many people would suppose, but it is practical. The health officer, or health superintendent of every city ought to insist upon a thorough water analysis at least twice a month, and cities of any considerable size ought not to be allowed to have wells at all. If they exist, they should be subjected to the same regular examinations as that of the public water supplies, and if found at all suspicious, they should be immediately filled up, this would eliminate them very fast. If the same rigid rules were carried further into the country and the superintendent of health of the counties were instructed, or forced to test the purity of the water of all wells, typhoid fever would prevail a great deal less than it does.

TREATMENT OF PRIMARY CARCINOMA OF THE PROSTATE.

Until recently we have been taught that prostatectomy for carcinoma is unjustifiable, if not worse than that, on the ground that "cure" was out of the question. Most of the text and reference books dismiss the subject of radical treatment with a few words—to the effect that anything but palliative treatment is practically out of question.

The reason for this state of opinion is found in the fact that the patients reached the hands of the surgeon too late, the disease having passed beyond the boundaries of the prostate. Formerly, almost all cancer patients applied for surgical relief too late, hence one reason for unfavorable operation statistics. The same rule applies to primary carcinoma of the prostate which applies to carcinoma in other accessible parts of the body, namely, that if the neoplasm be extirpated while it is yet confined to its original site a favorable result is likely to be obtained. This constitutes a plea for early investigation, early diagnosis, and early radical operation.

George W. Hawley, of Seattle, Washington, in a masterly monograph containing a resume of this subject (*Annals of Surgery*, June, 1904, Vol. xxxix, p. 892) demonstrates that primary carcinoma of the prostate constitutes a considerable proportion of the cases of prostatic disease. It is shown, also, that the operative experience of a third of a century, beginning with 1859, was a record of uniform failure, as to cure, undoubtedly due to the fact that most, if not all, of the cases operated during this period were mature cases with metastases. Recent statistics of operation

afford a much brighter outlook. Orison's report of 23 cases from the French clinics is cited, 43 per cent. of them having remained well more than four years. Six others recovered from operation and were lost sight of. There were three recurrences and four operative deaths.

It is plainly shown that carcinoma of the prostate tends to remain strictly localized for a considerable period, during which time we may reasonably expect to obtain cure in a large proportion of the cases. The only contraindications to radical operation are the patient's inability to withstand any operation at all, or the presence of manifestations of regional or remote metastases—regional, to the glands, the seminal vesicles, the rectum, bladder, urethra (extensively) and pelvis; remote, to the marrow of the bones.

Since extension of carcinoma from the prostate, either by contiguity of structure or by metastasis, does not as a rule occur for a long time after the inception of the disease, it is clear that early diagnosis and prompt radical operation will do much to lessen suffering and add to the sum total of life in this class of patients.

Of the early subjective symptoms of prostatic carcinoma pain is the most important. It may be referred to the perineum, glands, or rectum, and often radiates to the back and thighs. There are probably few cases in which pain does not occur early in the course of the disease, although it may be somewhat vague in character. Persistent pain in the prostatic region in men above 45 demands careful investigation, particularly if the patient is known to have an enlarged prostate. Hematuria is not likely to be an early symptom, nor any other special urinary finding. Objectively, by rectal examination, a nodular or lobulated condition with little or no tenderness is very suggestive of carcinosis, and there may be but a single nodule. Positive early diagnosis is, of course, difficult, often impossible, but tentative diagnosis is relatively easy.

THE TREATMENT OF SUSPICIOUS TUMORS OF THE BREAST.

There are few conditions carrying a greater degree of responsibility than the early management of suspicious tumors of the female breast. In many of the cases the question of what to do taxes the judgement of the best physicians and surgeons. There is, in fact, a wide difference of opinion in this matter among some of the prominent surgeons—a difference which seems unwarranted. Of course, when a mammary tumor is undoubtedly malignant and is still confined to the breast the right

treatment is plain to all. The main contention arises in connection with suspected cysts and enlargements known to be cystic. Many cysts of the breast are benign, nevertheless, the majority of surgeons advise the extirpation of all mammary cysts on general principles, on the ground that the majority of them are malignant, or become so. Also, it is often impossible to differentiate by means of palpation between deep-seated cysts and solid tumors. A few, very few, prominent surgeons advocate the use of the exploring needle to settle the differential diagnosis in doubtful cases. At least one eminent surgeon advises aspiration of mammary cysts as a curative measure, and cites a series of what he calls cured cases to justify his position. In a series three-fourths as large as this one, reported from another source, out of 30 cases of "chronic cystic mastitis" there were three cases of microscopic carcinoma and 27 cases of adenomatous proliferation of the cyst lining suggestive of beginning carcinoma. Clinically and macroscopically all these cases were indistinguishable from each other. It would seem that due consideration of this last series of cases leaves no chance for argument as to the proper course of treatment in such cases.

Now, as to the employment of the aspirating needle for diagnostic purposes. It is well known that if a few cancer elements are transplanted into territory contiguous to a cancer extension of the growth is prone to occur. This fact should be sufficient to deter us from puncturing a doubtful growth through healthy tissue. It is even necessary to be very careful in manipulating such growths, lest cancer elements be forced into the surrounding tissues or into lymphatic channels.

Considering these facts, then, we cannot see how the use of the aspirating needle can be advised, either as a diagnostic or a therapeutic agent. It certainly is not consistent with our present knowledge. Another thing. These tumors are as a rule first seen by the family physician, who is not usually an expert in surgery. It certainly is bad teaching to advise the general practitioner to employ the aspirating needle indiscriminately in breast tumors, which is practically what the advice of those surgeons who practice aspiration of these cysts would amount to. That which may be permissible practice in the hands of the very select few might prove disastrous with all others. The thing for the general practitioner to do in this class of cases is to submit them to the judgement of a surgeon as early as possible, and to avoid undue manipulation of the tumors. Most surgeons will advise removal of the tumor or of the entire breast

with the axillary glands, depending upon the clinical history and the conditions found in individual cases.

STATE BOARD OF EXAMINATION.

Dr. Osler, of Baltimore, recently discussed this subject at a dinner in New York. It seems to be a fad among many medical men and medical editors to criticise our present system of State medical licensing boards. We have never believed that it was as bad as most people pretend to believe. There might be made some improvements, but the necessity of reform is not so great and not so urgent as the speakers and writers would lead us to believe. It is indeed a very small per cent of physicians, after they have become established, wish to move from their state to another. The class of physicians that our present system probably hurts the most will not amount to more than one per cent. of the physicians in North Carolina. Is it wise to modify our laws, possibly to the extent that they might be defective in other respects, in order to get these medical itinerants into the profession? I hardly think so. Besides, the man who has been in active practice for several years and has been the student he ought to be, is as well prepared to pass an examination as he was when he graduated. In chemistry, anatomy and physiology he has no doubt forgotten many things, but if he is the student and practitioner that deserves the respect and consideration of his associates, he is better prepared to stand the examination in the practice of medicine, *materia medica*, surgery and obstetrics than he was when he graduated. Anyone who has had any experience would never again use this argument for reform, that it is a hardship for a physician to stand an examination after he has practiced for several years. There are exceptions to all rules, and of course there may be to this one, that I will mention. It is this, anyone who has studied the subject must admit that these itinerant doctors, who change their location after they have been practicing for a few years are not usually the class of men who deserve our applause and consideration. It will be a long time, really I doubt if it ever comes, when we will feel inclined to modify our medical laws to accommodate this class of men. The few good men, who come to North Carolina to practice medicine comply with our regulations without a murmur. They do not consider it a very great hardship to stand our examinations and comply with our rules.

Possibly a national examining board could be established by the American Medical Association that would be self-sustain-

ing, where young physicians could obtain license that would be recognized by the various examining boards throughout the country. If a young man, or a man who has been practicing medicine for some time, contemplates making a change, could pass this examination and go anywhere that he wishes, change his location every six months if he wants to. The standard of this national board would have to be unquestionably higher than that of any State board. If this arrangement could prevail, it might be an advantage to a few, but not many.

SMALL HOSPITALS.

The belief is growing steadily and fast, both among the laity and among the members of the profession, that well-equipped hospitals afford facilities for the treatment of medical and surgical cases that are not available in any ordinary home, and the prejudice against institutions of this kind is rapidly passing. In the well regulated and thoroughly equipped hospital with efficient nursing and perfect dietary regime, where all remedial aids are accessible, and where the patients are kept directly under the supervision of the physician, many lives are saved that would otherwise be lost. It takes money to run and properly conduct a hospital. The size of the institution does not seem to greatly influence the daily average cost for each patient. Statistics show that in certain parts of the country it costs hospitals more to maintain their patients than in others. It costs institutions of this kind situated in the South Atlantic States, from \$1.25 to \$1.75 per diem to properly care for a sick person. In hospitals with fixed minimum rates lower than this, where proper nursing and medicines are included, are apt to be financial failures.

Book Notices.

The Practical Application of the Rontgen Rays in Therapeutics and Diagnosis. By William Allen Pusey, A. M., M. D., Professor of Dermatology in the University of Illinois; and Eugene W. Caldwell, B. S., Director of the Edward N. Gibbs Memorial X-Ray Laboratory of the University and Bellevue Hospital Medical College, New York. Second Edition Thoroughly Revised and Enlarged. Handsome octavo volume of 690 pages, with 195 illustrations, including four colored plates. Philadelphia, New York, London: W. B. Saunders & Co., 1904. Cloth, \$5.00 net; Sheep or Half Morocco, \$6.00 net.

This excellent work has attained the distinction of two large editions in one year—

a proof not only that such a work was needed, but also of the book's practical value. The vast amount of literature accumulated during the past year has been very carefully digested, and the latest knowledge and advancements incorporated. A practical feature of the work lies in the fact that nearly all the illustrations represent actual clinical subjects, showing the benefits of the X-rays at various stages of their application. The chapters by Caldwell give full details regarding the use and management of the apparatus, the text being fully illustrated with many photographs and drawings, including four full-page colored plates. The second edition has been brought strictly down to date, especially the case histories cited; and by the addition of much new matter and a number of new illustrations, the usefulness of the work has been greatly extended. It is the latest and best book on this subject.

Radiotherapy, Phototherapy and High Frequency Currents. The Medical and Surgical Applications of Radiology in Diagnosis and Treatment. By Charles Warren Allen, M. D., Professor of Dermatology in the New York Post-Graduate Medical School. Octavo, 618 pages, 131 engravings and 27 plates. Cloth, \$4.50, net. Lea Brothers & Co., Publishers, Philadelphia and New York.

Recent discoveries in radiant energy have developed a new and important system of therapy. In fact, such positive results have already been achieved in maladies which were hitherto considered intractable, as to warrant the recognition of Radiotherapy as a very efficient addition to the resources of the profession. Dr. Allen's work is peculiarly opportune. It is based upon practical experience, as well as upon a careful review of the great mass of literature on the subject coming from almost all quarters of the globe. Naturally, in a science so new, much faulty observation has been encountered, and in this volume no effort has been spared to eliminate the errors and to present the subject correctly and abreast of its position to-day. Ample information is given upon the physical as well as the technical side, to equip the reader for the selection and management of appliances. The object of the work is always practical, and it has been the earnest endeavor of the author to enable his readers to secure for their patients prompt and permanent benefit. Accordingly, much attention is given to questions of diagnosis and treatment, and, inasmuch as such powerful forces as are treated of in this volume may do harm if improperly applied, cautionary directions are carefully given and exact in-

structions for the determination and measurement of dosage.

A Text-Book of Pathology. By Joseph McFarland, M. D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College of Philadelphia; Pathologist to the Medico-Chirurgical Hospital, Philadelphia. Handsome octavo volume of 818 pages, with 350 illustrations, a number in colors. Philadelphia, New York, London: W. B. Saunders & Co., 1904. Cloth, \$5.00 net; Sheep or Half Morocco, \$6.00 net.

It was with anticipations of much pleasure and interest that the reviewer began reading Dr. McFarland's work on Pathology, and he can truthfully say that his greatest expectations were more than fulfilled. The book is excellent—excellent as regards both text and illustrations. Of the latter there are a number of beautiful ones in colors, printed directly in the text. Dr. McFarland's thirteen years' experience as a teacher of this subject, besides his extensive personal research in the laboratory, has fitted him most admirably to write a text-book on pathology, and this superb foregoing work is all that any one—student or practitioner—could desire. Unlike most works on pathology, the subject is treated, not from the professor's point of view, but from that of the student, the many difficult theories of the science being explained in clear, concise language. Quite a few works on pathology have come to the reviewer's desk within the last few years, but none has reached the standard of excellence held by Dr. McFarland's work.

The Doctor's Recreation Series. Charles Wells Moulton, General Editor. A. J. Saalfeld Publishing Co., Akron, Ohio, 1904. Volume I. The Doctor's Leisure Hour, Facts and Fancies of Interest to the Doctor and his Patient. Arranged by Porter Davis, M. D. \$2.50.

We have looked over the first volume with much interest and much delight. It has been properly named. There is no better recreation than to read its amusing chapters. The series will be complete in twelve volumes. If they all prove as entertaining as this volume, they will be well received. This volume is a large one, size seven by ten inches, beautifully and substantially bound and printed on first-class paper. It contains many beautiful illustrations, and many master-pieces of ancient and modern wit and humor that relates mainly to medical life. Here we find recorded the pranks of the medical student and witticism of his teacher. The mistakes of the young doctor and the behavior of the ignorant patient and the ridiculous claims

of the noted quack. All physicians need to read some literature like this, which will amuse and soften the hours when work and worry wrinkles the face. This series of volumes promise to fill this want, I believe it should be read and in the library of every physician.

A Text Book of Alkaloidal Therapeutics. Being a Condensed Resume of all Available Literature on the Subject of the Active Principles Added to the Personal Experience of the Authors. By W. F. Waugh, M. D., and W. C. Abbott, M. D., with the Collaboration of E. M. Epstein, M. D. The Clinic Publishing Co., Chicago. 1904.

The authors of this book state that they have long recognized the urgent necessity for a work upon Alkaloidal Therapeutics, that should be as complete as the present knowledge of the subject permits. It is a fact that those interested in this kind of medication cannot find what they want in ordinary text-books. The principal demand for a work of this kind is by the physicians in the country who carry their medicines, and it is among this class that Alkaloidal Therapeutics is the most popular. The student, or physician who has become interested in Alkaloidal Therapeutics cannot afford to be without this book. It is well written and seems to be complete and up-to-date. The work is a large one, making over four hundred pages. It is well bound and printed on excellent paper and completely indexed. It gives us pleasure to recommend this book.

Rational Hydrotherapy. A Manual of the Physiological and Therapeutic Effects of Hydratic Procedures and the Technique of Their Application in the Treatment of Disease. By J. H. Kellogg, M. D., Member of the British Gynecological Society; The International Periodical Congress of Gynecological Obstetrics; The British and American Association for the Advancement of Science; The Societe de Hygiene of France; The American Society of Microscopists; The American Medical Association; Superintendent of the Battle Creek (Mich.) Sanatorium; Author of the "Art of Massage," etc., etc., with Two Hundred and Ninety-three Illustrations, eighteen in colors. Second Edition. F. A. Davis & Co., Publishers, Philadelphia. 1903.

For years excellent scientific treatises on hydrotherapy have existed in French and German languages, but for nearly half a century not a single systematic English work on the hydratic treatment of disease has appeared in the English language, except recently a work by Baruch. The

author's purpose in the preparation of this work has been to present in a more systematic and comprehensive way than has heretofore been undertaken a treatise on rational hydrotherapy. He has succeeded admirably in giving us a work that is thorough and complete and up-to-date in every respect. It has also been a part of the author's purpose in the preparation of this book to record some of the fruits of his own experience within the last twenty-five years, during which time he was superintendent of a large medical establishment, he has had opportunity to make a careful study of hydratic principles and methods.

The general order of the book is as follows: First, a short historical sketch and brief resume of the physical, anatomical, and physiological facts which are especially related to the subject. Second, a study of the physiological effects of thermic applications. Third, a description of the technique of all useful hydratic procedures; and fourth, a section on hydratic prescription making, in which is presented a brief summary of the indications presented by the diseases most commonly encountered in practice and of the hydric measures required to meet the same. The number of procedures described in the book is about two hundred. Of these procedures which are the outgrowth of his own experience, the author has only mentioned such as have acquired a recognized value by extended use. Of these, the most worthy of mention are the electric light bath, the percussion douche, cold mitten friction, cold towel rub, a number of forms of hot and cold compresses and packs, and the simultaneous hot and cold douche.

The writer has used for the foundation of this work a series of lectures which he delivered before a class of medical students in the summer of 1890. Similar courses have been given almost yearly since, to classes of increasing number, and there has been a growing demand for a text-book embodying the essentials of the subject matter and adapted for the use of the medical students and nurses, as well as practitioners, who desire to obtain a knowledge of the foundation facts and principles of rational hydrotherapy.

Modern scientific research has placed upon a sure foundation the great truth—dimly recognized by the earliest physicians, but wholly lost sight of during the Dark Ages—that healing power is not possessed by physicians, nor not entirely by remedies, but that the curative process is simply a manifestation of the forces which dwell within the body and which are normally manifested in creating and maintaining the

organism: in other words that the body heals itself.

The book is a very large one, beautifully bound with numerous illustrations, carefully indexed and contains eleven hundred and ninety-three pages.

Review of Southern Medical Literature

Texas Medical Journal, July, 1904.

The Cause and Prevention of Rape.—F. E. Daniel, M. D. The author considers that this class of criminal is the result of an atavism to the primitive savage, tracing the origin of the act to the custom of acquiring wives by capture, which is still practiced by certain tribes in Australia and Africa, and by the Fugians. He considers that there is a connection between the crime under consideration and Sadism. He very pertinently points out that lynching does not appear to deter others from committing the crime; in fact, that the death penalty has failed as a deterrent, citing Haslem who says, that out of 167 persons executed in England in the days of public executions, all but one had witnessed an execution. Prior to 1837 picking pockets was a capital offense in England and it is recorded that in the crowd watching an execution of criminals for this offense, pockets were being picked. He advocates as prevention a speedy trial without undue publicity, except where there is conclusive evidence, when no trial is necessary, while for other forms of sexual perversion he recommends drastic mutilation of the genitalia. The methods of prevention advocated will not prevent the crime itself or the crime of lynching. A speedy trial, the public having confidence in the integrity of the judge and jury with life imprisonment as a penalty as carried out in Europe are more likely to commend themselves to the nation than the barbarities of lynch law and mutilation.

Compound Communited Fracture of the Spinal Vertebrae Extending from the Second Lumbar to the Base of the Sacrum Exposing the Cauda Equina Operation and Recovery.—E. M. Albers, M. D., gives a detailed account of a very successful operation in a serious case of fracture of the vertebrae; six weeks after the operation sensation below the seat of injury unimpaired, motor somewhat impaired, papella reflexes exaggerated, the walk of the patient showed some incoordination of the muscles of locomotion. One year after the injury the patient was fully restored.

On the Prevention of Malarial and Typhoid Fevers.—I. E. Morris, St. Lawrence Porley and I. D. Jordan. The article is

the report of a committee appointed by the Madison County Medical Society to report on the subject. The report is well worth reading, containing much valuable and practical information.

A Case of Renal Calculus With Operation.—John B. Thomas, M. D., described in detail a very successful operation on a patient with renal calculus, the case being remarkable from the fact that symptoms had existed when only four years old, he having his first severe attack at 12 years. The patient was 20 at the time of the operation.

New Orleans Medical and Surgical Journal, July, 1904.

Summer Diarrhea of Infants.—Louis M. Warfield, A. B., M. D. The writer reviews the bacteriology, symptomatology and prophylaxis of this disease. He divides the treatment into hygienic, medicinal, mechanical and specific. Cleanliness is of the utmost importance, the patients should be lightly clothed and kept in the open air. Opium should not be given, but calomel in divided doses or castor oil, all milk should be stopped for 24 hours, even breast milk, and nothing given but boiled water or weak tea. On the following day bismuth subnitrate with a little paregoric or deodorized tinct. of opium with strychnine, camphor, brandy, digitalis as required. In the beginning of the attack lavage of the stomach is recommended. If on the fourth day the stools still contain mucus and undigested food, irrigation of the colon with normal saline or sodium bicarbonate 3i oi. For the fever and irritability warm full baths, also sponge baths with cold water or dilute alcohol. If collapse supervenes the mustard bath is a good stimulant, subcutaneous saline solution may be given. The serum treatment has not given good results, but it is indicated in very acute cases.

The Southern Practitioner, July, 1904.

Therapy of Sodium Chloride.—I. S. Nowlin, M. D., strongly advocates the use of sodium chloride as a therapeutic agent on physiological grounds. He points that it is one of the most important constituents of the blood maintaining the alkalinity of the blood and of the tissues, enhancing the power of endosmosis and exosmosis and aiding digestion.

He advocates the administration of salt solution by the rectum, contending that the rectal mucosa is the most favorable surface for absorption found in the alimentary canal and that it is the only place where the agent introduced passes into the system

without a greater or less degree of change, also that irritation of the rectum or pressure upon the sphincter muscle or distention of the walls from the anus to the sigmoid is a stimulant to the respiratory and cardiac nerves. He points out that normal salt solution is a strong antiseptic and to the benefits obtained by sea bathing. He recommends rectal injection of salt solution in eclampsia recording a case where it was evidently of benefit.

After Treatment of Abdominal Section.—L. E. Burch, M. D., considers the three most prominent symptoms after abdominal section to be backache, thirst and nausea. For the backache he rubs the back with alcohol or places a small pillow beneath it. For the thirst he gives a high enema of normal salt solution, repeating it every four hours, if necessary. For the nausea inhalation of vinegar or hourly doses of tinct. of iodine. He emphasizes that opium should be avoided and that the bowels should not be moved too soon, the avoidance of milk as a diet until the sixth day and the use of a saline enema at the completion of every abdominal operation for the relief of thirst.

Quinine in Malarial Hematurid and Hemaglobunuria.—W. R. Haynie, M. D., advocates the use of quinine in these diseases.

Southern Medicine and Surgery, July, '04.

Errors in Diet as a Cause of Infantile Diarrhea.—St. G. Grivman, M. D., reviews the statistics of mortality from infantile diarrhea, drawing attention to the high mortality of "bottle fed" infants, and giving the chemistry and the changes that take place in cow's milk on keeping and on boiling, as well as valuable hints on infant feeding. He considers that before a race considers the problem of increasing the number of births it should consider the problem of decreasing the number of deaths.

Chronic Gastritis.—Raymond Wallace, M. S., M. D., points out the rarity of primary chronic gastritis, giving a very practical review of the differential diagnosis of diseases of the stomach, claiming that the diagnosis of primary chronic gastritis can only be made by exclusion.

Pelvic Disorders.—W. G. Bogart, Professor of Gynecology, Chattanooga Medical College, calls attention to the various causes of pelvic disease and diseases of other organs which may give rise to pelvic symptoms, emphasizing that great caution should be observed in diagnosis with the uterine

sound and considers that the pessary has a very limited field of usefulness.

Louisville Monthly Journal, July, 1904.

Traumatic Urethral Stricture.—Irvin Abell, M. D., records a case in which the entire corpus spongiosum had been changed into cicatricial tissue for three inches from the meatus due to a silver tube having been used to dilate the meatus at the age of 15.

The Surgical Treatment of Ulcer of the Stomach and Duodenum.—William H. Walther, A. M., M. D., reviews the subject of ulcer of the stomach and duodenum recommending early operation.

Of What Value is Blood Examination to the Surgeon.—Thos. L. Butler, M. D., emphasizes the advantages of complete blood analysis to the surgeon as well as to the general practitioner.

Ether Anesthesia.—R. Lindsay Ireland, M. D., reviews the question of ether versus chloroform, strongly advocating the former.

Maryland Medical Journal, July, 1904.

Antitoxic Serums in the Treatment of Disease.—Harry T. Marshall, M. D., gives a summary of Ehrlich's theory in its relation to antitoxins and immunity.

The Ethical Relations of the Dominant Schools of Medicine.—Eldridge C. Price, M. D. In his annual address as President of the Maryland State Homeopathic Medical Society. Dr. Price endeavors to bring about a closer relationship between the two schools of medicine.

The Determination of Renal Capability Its Present Status.—John W. Churchman, M. D., gives a very complete review of the present status of our knowledge and methods of determination of this very important subject.

Journal of the Mississippi State Medical Association, July, 1904.

Address on Hookworm Diseases or Uncinariasis with Special Reference to Its Eradication.—Chas. W. Stiles, M. D., describes the species of hookworm found in America and Europe, their structure, habitat, eggs, embryo and modes of infection, the latter being either through the mouth or by boring through the skin, giving rise to "ground itch." He divides the cases into three classes, those which show a few hookworm eggs in the faeces but who are apparently healthy, those who in addition to the presence of hookworm eggs in the stools ex-

hibit more or less anemia, and those in which the symptoms are severe. He describes the general symptoms in detail, including infantilism and the "hookworm stare." For the prevention of the disease he advocates a campaign of hygienic education among the population of rural districts, boiling the drinking water and compelling the children to wear shoes are advocated, but he considers the proper disposal of fecal matter of greater importance. The diagnosis must be made with the microscope. The treatment consists in the administration of thymol or male fern. First place the patient on a diet of milk and soup for two or three days, then administer the compound mixture of senna 2 oz. and calomel 6 grains, divided into four doses, given every two hours, beginning at noon to remove the mucus that frequently protects the worm. On the following day give 31 grains of the thymol at 8 a. m., 31 grains at 10 a. m., and magnesia or other laxative at noon, this treatment to be repeated once a week till the parasites are expelled. It is important that no alcohol should be given during the treatment.

Malaria, Its Causes and Treatment.—I. Walford, M. D.

Treatment of Broncho-Pneumonia.—H. L. Sutherland, M. D., describes the differential diagnosis of broncho-pneumonia. In treatment he has not had good results with the creosote compounds and considers quinine as of great value in reducing temperature; beginning with a calomel purge he uses aconite and inhalations of creosote, turpentine or compound tinct. of benzoin and as stimulants strychnine nitrate and whiskey.

The Importance of the Early Diagnosis of Syphilis.—S. W. Morton, M. D., points out the importance of early diagnosis and the necessity of a three-year treatment.

Abstracts of the Leading Articles of the Month.

Bromide of Ethyl as a General Anesthetic and as a Preliminary to Ether.

Huggard, in the *London Lancet*, describes bromide of ethyl and says that it is a colorless liquid with an ethereal odor, free from garlic-like smell, and that its specific gravity is from 1.445 to 1.450 and its boiling point from 100.4 to 104 deg. F. The garlic-like smell of some impure specimens, which Mr. Gilmour ascribes to phosphuretted hydrogen, is said by Loebisch, in Eulenburg's "Real-Encyclopadie," to be due to ethyl sulphide. To avoid confusion

some chemically related bodies may be placed in comparison: Bromide of ethyl, C_2H_5Br ; bromide of ethylene, $C_2H_4Br_2$; bromide of methyl, CH_3Br ; and bromoform $CHBr_3$. Bromide of ethylene and bromide of methyl are highly toxic when inhaled. Bromide of ethylene administered in mistake for bromide of ethyl has been responsible for at least three deaths. Bromide of ethyl, known variously as bromoethyl or ether-bromatus, should be sent out by the manufacturer in hermetically sealed brown bottles, each containing only enough for a single administration, and if any is left over it should not be used. The amount to be used at a single administration is now generally placed at from 10 to 30 grammes, or, by measure, from two to six fluidrachms. Fifteen grammes measure exactly 10.5 cubic centimeters, or roughly three fluidrachms. More than one warning, however, has been given that 30 grammes (eight fluidrachms) is too large a dose and may occasionally give rise to unpleasant symptoms, such as collapse and cyanosis, and that from 10 to 15 grammes is the largest amount that is needful or advisable. Most writers agree that prolonged anesthesia by means of this drug is to be avoided, and that if necessary the anesthesia is to be continued with ether or chloroform.

The usual mode of giving bromide of ethyl is by means of a mask covered with impermeable cloth. The mask should fit closely so as to exclude the air. Most authorities recommend that the entire amount to be administered should be poured at once on the mask and given at one dose. When the raised arm falls the patient is ready for any short operation. The inhalation is discontinued as soon as the patient is anesthetized. This usually occurs within from half a minute to a minute, and the patient wakes up in from one to three minutes. The face flushes moderately, but the color is not otherwise affected. The pulse as a rule is unaltered, or slightly quickened; according to Silk the tension is much lowered. If anesthesia lasting more than two or three minutes is required the bromide of ethyl mask is withdrawn the moment narcosis is established, and the ether mask is immediately substituted. The bromide of ethyl anesthesia then passes rapidly into ether anesthesia without any struggling stage. Amongst the cases that are unsuitable for bromide of ethyl anesthesia are very young children, very weak and anemic persons, the subjects of Bright's disease or of fatty or otherwise degenerated heart, and alcoholic patients. Alcoholics are apt to become excited and do not readily go "under." As to vomiting there is great discrepancy, its occurrence varying in

the statistics of different observers from 1 in 400 to 15 per cent and even to 66 per cent. Dr. Kelly, who has the highest vomiting record, ascribes this result partly to the tender age of the majority of the patients, partly to the fact that a very large proportion of his operations were for the removal of adenoids or tonsils, involving some bleeding into the throat or mouth, and partly to the disregard in dispensary practice of injunctions as to abstinence from food before operation. Sickness, when it occurs, is most usually after the anesthesia is over.

Another drawback of bromide of ethyl anesthesia is that the muscles do not usually become relaxed. For this reason in operations on the mouth a gag is inserted before the operation is begun. A period of excitement, sometimes violent, has occasionally been noted after the patient wakes. Hankel in 1897 had collected twenty-one cases of death; three of these occurred in from twenty-one to thirty hours and one seven days after the anesthesia. In two or three other cases transient fainting attacks or collapse appeared some time after the operation. More than a third of these deaths were due to causes that would be avoided nowadays, such as excessive doses (60, 130, and 180 grammes), prolonged administration, impure or decomposed bromide of ethyl, or fatty heart. Respecting the remaining cases the author has not sufficient information to form an opinion. In spite of its drawbacks pure bromide or ethyl in proper doses properly administered to suitable cases appears to be at least as safe as ether.

The Treatment of Chronic Nephritis in Children.

Sawyer (*Birmingham Medical Review*) believes that the patient's diet should be judiciously regulated with the view of lightening the work of the kidneys as far as possible, and to relieve the distressing gastric symptoms which accompany the disorder. The child should eat sparingly of meat, which food should only be taken at one meal daily. As a general rule, the quantity of animal food should be diminished as far as possible, while all kinds of vegetable food may be permitted, especially the farinaceous.

The patient must be warmly clothed, live so far as possible in an equable atmospheric temperature, and take some physical exercise daily. These are very important points in treatment, for in this way the functions of the skin are kept active, and a tendency to diaphoresis is produced. Exposure to cold is very harmful in this disease. Dr. Dickinson has pointed out that "cold to the surface is a renal stimulant,

and warmth a condition in which the kidneys are comparatively at rest." A resort to a warm climate, however, does not seem to be advisable in the chronic nephritis of children, because by the time that the condition is diagnosed the disease is usually so far advanced that it rapidly becomes fatal.

Constipation is nearly always present, and usually calls for medicinal treatment. Not only a regular but a free action of the bowels must be maintained by purgatives. Saline purgatives are the best; by their employment the high arterial tension, so usually present in the disease, may be lowered, if necessary, and the headaches, dyspepsia, and vomiting may be considerably relieved. The patient should be allowed as much water as he wishes to drink, for by this means not only is the thirst quenched and the kidneys flushed out, but many of the symptoms which are partly due to there being less water in the body than is normal, such as constipation and dryness of the skin, may be alleviated, and the poisonous materials in the blood may be to a certain extent diluted. Vomiting, which is often very constant, is a difficult condition to treat; many well known antiemetic measures may be tried, but only with temporary relief. Owing to the progressive anemia, iron is often indicated, and may be given as the solution of ferric chloride or acetate, or as tartrated iron. On account of the constipating action of these preparations, it is usually necessary to add to them an aperient, such as potassium or magnesium sulphate or the acid potassium tartrate. Edema is a rare symptom. When it is present, it should be treated by such drugs as digitalis and squills, or saline purgatives and diaphoretics may be employed. Vapor baths may be beneficial in relieving this complication. With the onset of uremic symptoms, much less can be done to relieve the uremia in a child than in an adult. By the employment of active purgation and hot-air baths, however, some alleviation may be procured. On account of its powerful and rapid diaphoretic action, pilocarpine may be administered hypodermically, in a dose of one-thirtieth of a grain to a child of four years old, at the commencement of uremic symptoms. This remedy must be used with great caution if there be any signs of cardiac failure, since under such circumstances the drug may even accentuate the attack of uremia it is given to avert. Uremic convulsions in a child can be controlled to a certain extent by inhalations of chloroform. Venesection, so efficient a remedy in severe uremia in an adult, seems to be contraindicated. The infusion of normal saline solution may be practiced with benefit. Epistaxis, as a

complication, is not usually profuse enough to call for very energetic treatment. Within certain limits it may be salutary, as an effort on the part of nature to reduce an extremely high-tension pulse; while the removal of a little of the poison in the blood, which is brought about by the hemorrhage, may be beneficial to the patient. Sometimes, however, the epistaxis is so severe as to necessitate the plugging of the posterior nares.

Injuries to the Child's Head During Delivery.

Robert Jardine, in the *Journal of Obstetrics and Gynecology*, says:—In ordinary practice depressions of the skull produced during delivery are not common; as a rule, they are produced in contracted pelvis by pressure of the promontory; but they may also occur where the pelvis is normal, but the mother's abdomen is so pendulous that the head will not enter the brim, or by pressure of an ischial spine. As a rule the frontal bone is the one affected, but in breech cases the parietal may be depressed. Fracture may occur, and yet there may be no evident depression. Dr. Munro Kerr has pointed out that a depression of the skull may be raised by applying pressure to the head antero-posteriorly in an oblique diameter at right angles to the depression. In some cases the indented portion will rise just as it does in a bowler hat, but in others it will not. This simple procedure should be first tried; if it fails, cut down through the bone and raise the depression at once. Cortical or meningeal hæmorrhages, traumatic keratitis and hæmorrhage into the optic nerve, retina or anterior chamber of the eye may occur during labor. Subconjunctival hæmorrhages are common even in normal labours; cortical or meningeal ones are liable to cause death; and if the child survives, there is considerable risk of permanent injury to the brain. In high forceps deliveries one blade of the instrument usually lies over or near one eye. Beyond bruising there is usually no injury, but occasionally the eye is more or less damaged. In difficult deliveries the eye has been enucleated, and hæmorrhage into the anterior chamber is occasionally seen and retinal hæmorrhages and those into the optic nerve may also occur.

Sialogogues: Their Therapeutic Employment.

Robinson, in the *Scottish Medical and Surgical Journal*, says that in conditions of amyloseptic dyspepsia great benefit can be obtained by the slow mastication of starchy food. In more aggravated cases the patient should be told to chew slowly some one of the vegetable agents which exert a distinct sialocinetic influence. In

cases of hyperchlorhydria, our aim ought to be to secure the digestion of the amyloseptic constituent of the meal before the free acidity has had time to check proteolysis. This we can do by increasing the flow of normal saliva. In many cases of feeble gastric digestion the fault is due to merely a diminished activity in the gastric juice, both hydrochloric acid and pepsin being present in less than their normal amounts. When saliva is introduced into such a stomach, it has the effect of stimulating a more copious and also a stronger secretion, and so the more saliva introduced, the larger is the amount of gastric fluid which is secreted. In many such cases as he has described, the author has found that a stimulation of the salivary secretion by means of palatable and pleasant vegetable sialogogues, as, for example, ginger, gentian, peppercorns, cusparia, etc., has been of the greatest benefit to the patient. Such bitter agents as cusparia, calumba, gentian, chamomile, etc., exert also a very beneficial effect on the gastric mucous membrane. Other salivary stimulants are at the same time carminatives, as pimenta, ginger, pepper, etc. We can thus obtain both actions from the same drug and employ them therapeutically.

Gastric Hemorrhage.

J. Fuhs, in the *Brooklyn Medical Journal*, gives the following tests to detect blood in the stomach contents:

To the filtered stomach contents add equal parts of glacial acetic acid, then shake with ether, remove the ethereal layer, adding ten drops of turpentine. A blue color is produced even when minute quantities of blood are present. The addition of chloroform makes the blue color more pronounced. Neither Teichmann's nor Heller's tests are so reliable as Weber's.

The shape of the coagulum may also serve to indicate the location at which the blood became clotted. The characteristic grooves may indicate that they have been formed at the valvula conniventes. The first inch or so of the duodenum lacks valves, although they are found in large numbers below the entrance of the common bile duct.

A careful examination of the clot may reveal the presence of small particles of gastric mucosa and clear the diagnosis as to the seat of hemorrhage. These particles exhibit the characteristics of the glands of the pyloric or cardiac portion of the stomach.

Acid reaction of the bloody fluids and clots, due to the presence of hydrochloric acid, gives evidence of the blood having remained in the stomach. On the other hand, the absence of hydrochloric acid should not

lead one to believe that they have not been in the stomach.

Tropical Diseases.

Hewlett (*The London Practitioner*) comments upon a volume on malaria recently issued by the government of India. The description of mosquitoes, with their eggs and larvæ are very important. In certain parts of India from 65 to 75 per cent. of children under ten years of age have malarial parasites in their blood, while the adults may be free from infection. Concerning the relation between enlarged spleen and malaria in India, he finds that (1) A high endemic index in India is always accompanied by a high "spleen rate." (2) A high "spleen rate" may exist in adults, and in children without a corresponding parasite infection. (3) The "spleen rate" in adults is no indication of the prevalence of malaria. (4) The "spleen rate" is entirely influenced by the "parasite rate." As the latter increases or decreases so does the former. Rogers regards malarial cachexia as really malarial and not as due to a secondary infection. The same author finds that the total number of leucocytes is diminished in malaria, but that the large uninuclear variety is relatively increased. From 200 to 300 parasites to the cubic millimetre of blood will usually cause malarial symptoms in England, exposure to cold favoring their development more than warmth and rest.

Concerning treatment, Moore and Allison conclude: (1) Methylene blue will destroy malarial parasites but quinine is more certain to do so. (2) Methylene blue is most useful in chronic cases but has no advantage over quinine. (3) The effects of methylene blue are more unpleasant than those of quinine. (4) When quinine cannot be taken methylene blue may be given. (5) Methylene blue is probably valuable in hæmaturic and hæmoglobinuric fevers on account of its diuretic action. (6) Quinine is the quicker and more certain drug of the two.

Kuhn proposes to use a serum for malaria by subcutaneous injection. He claims radical results. Arrhenal, a preparation of arsenic, has been found less useful than quinine.

Other diseases, considered in this article, are Kala-azar, plague, dengue, mycetoma, bilharzia disease, ankylostomiasis, and sleeping sickness.

The Anatomy of the Pancreas.

Opie, in the *Johns Hopkins Hospital Bulletin*, September, mentions the variety of functions of this organ and the complexity of its structure. In the dissection of 100 injected specimens, he found two

ducts in every instance, the common bile duct always joining the duct of Wirsung, and the duct of Santorini entering the intestines alone at a level nearer the pylorus. In a third of all cases it was concluded that the duct of Santorini could not act as an accessory outlet when the duct of Wirsung was occluded. The duodenal orifice of the diverticulum of Vater, the common channel of the pancreatic and common bile ducts, had an average diameter of two and a half millimetres, which shows how readily a calculus may occlude both ducts. Between the two lobes which constitute the head or duodenal end of the organ is a cleft midway between the two ducts and in contact with the duodenum. An accessory nodule of pancreatic tissue is sometimes found in the submucosa or muscularis of the stomach, duodenum or jejunum.

Among the secreting acini of the organ are round or oval bodies composed of polygonal cells, constituting the so-called islands of Langerhans. It is thought that these bodies have the influence upon carbohydrate metabolism which was formerly attributed to the entire organ. Two important conclusions are reached by the author as the result of his anatomical investigations: 1, that the organ consists of two functionally diverse elements, namely, cells which supply to the intestine important digestive ferments, and cells which have no communication with the ducts of the gland, but are in intimate relation with the blood vessels; 2, that the close anatomical relation of the pancreatic duct with the common bile duct favors the transmission of morbid processes from the liver and bile passages to the pancreas.

Pathogenesis and Pathological Anatomy of Enlarged Prostate.

Crandon, in the *Annals of Surgery*, examined specimens from 37 cases of senile prostate, 12 of these were enlarged, 24 were normal size, and one was small. In one-half of the cases the bladder showed a lip rising above the level of the urethral floor, forming the anterior wall of the retro-prostatic pouch. Microscopic examination showed the following changes in the wall of the bladder: fatty degeneration, the formation of new connective tissue and changes in the muscular fibers and sclerosis of the vessels. After describing the structure of the normal prostate the author finds that compared with the latter the enlarged prostate may be either soft and spongy, or hard and fibrous. The distribution of enlargement is irregular, most often it is in the lateral lobes, next in order of frequency, in one lateral, and the middle lobe, then in the middle lobe alone, and least frequently, in one lateral lobe. The anterior commis-

sure is rarely involved. Microscopic examination of hardened and stained sections shows that the area occupied by the glandular portions is relatively increased, that the muscular tissue, though remaining fixed in amount, shows fibrous infiltration around the acini and ducts, and in the muscular septa. That the connective tissue of the stroma is greatly increased, consisting either of small round cells, or irregular areas of hyaline fibers, which may contain the remains of glands denuded of epithelium or collapsed. That the glands and acini are widely dilated, epithelial cells are smaller, flattened, poorly stained or desquamated. He believes that the enlargement of the prostate is due to the dilatation of the acini, caused by the obstruction of the ducts. Regarding the causes of prostatic enlargement, the author arrives at the following conclusions: there is a slow formation of new connective tissue, due to infection, or to infection, aggravating a senile degenerative process, the agency of this infection is probably the gonococcus; neoplasms do occur, but are rare.

Debatable Points in the Treatment of Appendicitis.

Hamaker, in the *Pennsylvania Medical Journal*, says that if a given case has mild symptoms it may be treated medically for a day or two, when, if there is no improvement, operation should be performed at once. Before the third, and after the fifth day, the mortality rate is the lowest. Many physicians are now sustaining the surgeons in advocating operation as soon as a clear diagnosis of appendicitis has been made. Relapsing and chronic cases should be operated upon as soon as the patient will allow it. The best incision is the one which is made directly over the appendix, splitting the different layers of muscle until we reach the peritonæum. If there is pus the incision should be made with the view of obtaining the best possible drainage. In most instances the base of the appendix will be most easily and safely traced to its termination when approached from the outer side. The length and the shape (straight or curved) of the incision should be governed by the conditions in each case.

If there is no pus, or if there is an abscess and we are compelled to enter the peritoneal cavity, the appendix should be removed, but if, in an abscess case, the appendix cannot readily be found, or if it is a part of the abscess wall and it cannot be removed without opening the general peritoneal cavity, we should not seek to remove it.

Drainage is required only in pus cases. Medium and large size rubber tubes should be used. Gauze packing is not believed to

afford successful drainage, it may cause excessive exudation, ileus, and bowel obstruction. It also favors postoperative hernia. Being a foreign body it interferes with the patient's powers of resistance and may prolong shock. Wicking covered by rubber tissue, or even a glass tube, will furnish good drainage and will leave only a small opening to heal. It is less likely to be followed by hernia than is gauze packing.

The Borderlands of Diphtheria and Scarlet Fever.

Biss, in the *Lancet*, does not approve the utilitarian tendency of the present time to make hard and fast classifications of symptoms as disregarding the essential continuity of the states, health and disease, which exist not only for man and other mammalia but for the whole biological kingdom. Symptoms of one disease have a way of shading off into those of another, though the causes of the symptoms may be quite distinct. He discusses some of the conditions that lie between those aggregations of morbid symptoms denominated scarlet fever and diphtheria, leaving out of account the cases resembling measles and rotheln, but including the tonsillitis group.

He is opposed to "the fourth disease," saying that the only justification for the creation of a new disease is the erection of a fresh and sufficiently distinctive criterion for reference in case of doubt. Criteria shift their ground as knowledge advances, become of less importance, and old criteria may be positively baneful.

The symptoms of scarlet fever, diphtheria and tonsillitis (using that term in its broadest significance) afford many instructive examples of departure from their classical descriptions so as to merge insensibly into one another. Typical diphtheria may be placed at one end of a scale and typical scarlet fever at the other end. "Tonsillitis" includes a great variety of throat infections, some with the formation of a false membrane, and others with erythematous rashes that are not followed by peeling. In a diagram the relations between the various anomalous symptoms are shown graphically. The various groups of symptoms enumerated and interrelated are:—(1) Scarlatina, scarlatina with anomalous rash leading through tonsillitis with anomalous rash to tonsillitis and on through diphtheritic tonsillitis to diphtheria. (2) Scarlatina with diphtheria bacilli in the throat; scarlatina and diphtheria, through scarlatina without eruption but with diphtheria bacilli in the throat, through diphtheria with coccal infection of the throat to diphtheria. (3) Scarlatina *sine eruptione*, closely related to tonsillitis and to ulcerative tonsillitis with

or without rash, through membranous tonsillitis to diphtheria.

He mentions cases to illustrate the gradations and the difficulty of diagnosis even by experts in the fever hospitals. One of the regrettable things in the administration of such hospitals is the constant breaking out of scarlet fever in diphtheria wards, and of diphtheria in scarlet fever wards. In most instances such outbreaks can be traced to some individual, the equivocal nature of whose illness had caused its real bearing to be overlooked.

Notwithstanding all the aids to diagnosis we possess, certain cases are undiagnosable, the fact being that scarlet fever, diphtheria and tonsillitis have many points of contact at which any one of the three diseases may exist.

The Nature and Treatment of Spasmodic Asthma.

Wilkerson, in the *Medical Chronicle*, considers this subject under three headings:

1. The condition of body which makes the attack possible.
2. The exciting causes.
3. The attack itself.

He says asthma is an abnormal condition of a normal protective reflex similar to vomiting, both act in a similar manner in specially susceptible persons. All persons do not vomit after an indigestible meal, nor do all have asthma after a peculiar stimulus to the respiratory passages. The afferent disturbing impulses may descend from the brain or travel up from the ultimate parts of the body to the centre concerned. Still in almost all etiological lists it will be found that the bulk of the causes are rare, and some two or three groups practically are responsible for all the cases ordinarily met with, and the vast majority of these are in association with the respiratory tract. Superfluous tissue in the nostrils and post-nasal adenoids themselves, or as the nidus of manufacture of the exciting cause undoubtedly give rise to asthma, though the majority of cases treated for such have to return to the physician. When such is the case he gives Fowler's sol. $\mathfrak{M}$. iii., raised to $\mathfrak{M}$. v. t.d.s. p.c. and continues it for several months; and next to this Pot. Iodid gr. v. t.d.s. et. h. s. for a long period. The writer does not consider hydriodic acid as in any way superior, and recommends when diminishing dose to continue last dose of the day and discontinue earlier.

The author believes most cases have a definite exciting cause, the discovery of which is essential to cure; and draws particular attention to the external or rarer causes, and claims that when the patient's troubles are marked sneezing and coryza,

one should expect a particular cause. The more gross the irritant the less likely are we to have typical bronchial spasm. Citing the usual causes, he draws particular attention to the emanations from animals—horses, cats and dogs, also birds—and especially when these are shedding their coats, and claims that many persistent "colds" may be due to such apparently trivial causes.

Persistent asthma probably means a persistent cause, and may lie within the patient, such as an abnormal condition of the respiratory mucous membrane or some circulating toxin.

In the treatment of the attack itself he recommends hot applications between scapule and in front of the chest; also of the nitrates, especially the potassium salt. He does not combine it with belladonna. In the nitrates he has been disappointed and deprecates the use of chloroform and morphine except in selected cases.

Alimentary Glycosuria in the Children of Diabetic Parsons.

Lorand, in the *London Practitioner*, says, as a result of giving test meals containing starch or various forms of sugar to the children of diabetics and then testing the urine, comes to the conclusion that in a majority of cases such children have inherited a certain defective power of dealing with sugar. Apparently, the ability to assimilate carbohydrates is diminished. Obesity and acne are frequently present, and precocious puberty is often observed. Diabetes may not develop, and much can be done to prevent it.

Sweets and starchy food should be reduced to a minimum, if meat is a main article of the diet; and should be partaken of only moderately even if meat is not eaten. Such children should not embrace callings that require great intellectual or emotional strains (physicians, lawyers, stock-brokers) outdoor sports should be indulged in freely and alkaline mineral waters used constantly.

A Case of Transplantation of the Biceps Femoris Tendon.

Painter, (*Boston Medical and Surgical Journal*) reports this case. The patient, a female aged 28, had been a cripple from childhood, the result of infantile paralysis. She had been obliged to use two crutches, or a crutch and a cane all her life. She was a fairly developed woman, except for the lower extremities. In the left thigh there was a flaccid paralysis affecting all the muscles except the biceps. There was marked atrophy of both thigh and calf, but the muscles of the lower leg were not completely paralysed. In walking, the foot was turned inwards, and the leg was extended in that position through the action

of the biceps femoris. In the right leg there was complete flaccid paralysis of all the calf muscles. There was marked atrophy of the muscles of the thigh and leg, and in walking there was a position of extreme calcaneus. The right astragalus was removed, and the cartilage covering the top of the scaphoid and the anterior extremity of the os calcis was denuded, and also that covering the external malleolus. The tibia was moved as far forward as possible; the wound was closed with silkworm gut and the leg put up in plaster of Paris. An incision was made over the outer side of the left knee, parallel with the tendon of the biceps femoris, 12 cm. in length. The biceps tendon was cut off at its attachment, and the muscle dissected free to such a height as would make it pull as an extensor when inserted into the quadriceps tendon at the upper border of the patella. A slit was made through the expansion of the quadriceps tendon close to the patella, and the biceps tendon passed through this and fastened by two mattress silk sutures. The lower end of the fascia lata, which through the muscular pull of the tensor vaginæ femoris was acting in a similar manner to that in which the biceps femoris was exerting its pull, was divided from its attachment and reflected over the superior portion, making its combined insertion close to that of the transplanted biceps. The incision was closed with silkworm gut, and the leg put up in plaster of Paris. Use was allowed of the left leg in six weeks, but the ankle was kept fixed for three months. The result of the tendon transplantation was eminently satisfactory; the patient walks with the foot in a normal position, and the biceps is able to extend the leg within 10 deg. of the complete extension, and to hold it there with the toes pointing upwards.

Accidental Perforation of the Uterus.

Brothers, in *American Gynecology*, says that the first cases of perforation of the uterus are those which occur during the passage of a sound or curette. The accident is recognized from the fact that the instrument passes to a depth beyond that of the size of the uterus previously mapped out by bimanual examination. The suspicion that the instrument has passed into a Fallopian tube may justifiably arise, but in the present state of our knowledge cannot be safely assumed. These cases will usually get well if manipulations within the uterine interior are brought to a sudden termination, and particularly if no intrauterine irrigations are made. If the curettage or sounding was preliminary to an intraperitoneal operation, this may be proceeded with and the injury to the uterus repaired with several catgut sutures. No drainage is necessary.

If no intraperitoneal operation was originally projected, the patient ordinarily can be safely put to bed with an ice-bag over the hypogastrium, and given morphine or opiates.

If the uterus has been injured and the operator has irrigated the uterus, three sets of conditions may arise. In the first set a mild local peritonitis may call for nothing more than the same line of treatment. In the second set an acute septic peritonitis may call for a hysterectomy (usually vaginal), with drainage per vaginam. The third set of cases may be less virulent and more chronic. They are apt to terminate in abscesses, which may be located in the pelvic connective tissue or in the pelvic peritoneum. According to their seat, they may require being attacked from above or below. Very rarely will a hysterectomy be indicated in such cases. The operation will be in the nature of an exploratory laparotomy, and the exact line of work can only be determined on with the abdominal cavity opened.

When the uterus has been injured and the intestine dragged through the wound and become strangulated, laparotomy must be done as early as possible. If the strangulation has been fatal to the vitality of the gut, this must be excised. The uterus may then, according to the judgment of the operator, be repaired or removed. That even this state of affairs is not necessarily fatal can be inferred from the studies of Miquel, who reports five recoveries in eight operations.

Senile Dementia.

Pickett, in the *Journal of Nervous and Mental Diseases*, says senile dementia very rarely occurs before the sixth decade in life, and at least two-thirds of all patients over sixty years of age admitted to asylums are cases of senile dementia. During three and a half years there were admitted to the insane department of the Philadelphia Hospital 269 patients over sixty years of age, 69 of them not being senile demented. Many of the 200 true senile demented remained free from gross dementia for a long period after admission and, on the other hand, many of the 69 excluded cases were considerably demented on admission or became so finally. The essence of senile dementia is a quantitative change—a mental loss; but the more obvious change is frequently qualitative—excitement, depression, delusion—so that the disease may appear in a guise simulating one of the pure insanities—mania, melancholia, paranoia, etc. The mental loss is probably the source and spring of the entire disease—at any rate, the mental enfeeblement which ultimately appears in every case is peculiar and progressive, surviving the qualitative changes. Analysis

of it reveals the following characters: Enfeeblement of attention and slowness in the association of ideas; inexact and incomplete perception of the external world; several kinds of memory defects; impoverishment of the stock of ideas; impairment of judgment; diminution of normal feeling and morbid irritability; automatic character of the reactions (turbulence or apathy). As the disease advances mental loss becomes more palpable, and hallucinations, suspicions, persecutory ideas, delusions, violence, suicidal attempts, epileptiform attacks, or other symptoms make their appearance. In its perfectly simple form senile dementia exhibits none of these symptoms, mental power simply fading away imperceptibly; but such cases are rare, particularly in asylums. The commonest departure from simplicity of type consists in the added element of confusion. In a few cases this is the dominant feature, and may seem to call for the erection of "senile confusion" into a separate type of dementia senilis. Confusion of some degree is present in all types of senile dementia; it appears episodically in many cases, being one cause of the familiar street-wandering of senile dementia. In examining these cases certain facts presented themselves: Firstly, physical deterioration in senile dementia is greatest in the simple confusional type, and is progressively less in the excited, depressed, and paranoid types; secondly, hereditary degeneration is least in the simple confusional type, and is progressively greater for the others in the same order—excited, depressed, paranoid. These facts may perhaps be accounted for by supposing that senile cerebral changes, by impairing the association symptoms of the cortex, will cause simple mental loss in a man of normal nervous constitution only after diffuse degenerations have become established, revealing themselves in the cord by abnormal knee-jerks, etc., whereas in neuropathic individuals the cortical changes, at an earlier stage, light up the inherited tendencies to pure insanity. As regards excitement and depression in old age, it is to be remembered that irritability and violence do not constitute true mania, nor fear and anxiety melancholia. In the simple confusional patients under the care of the author such emotional manifestations were not infrequent, though they were always transient. Of all phases of this subject that of fixed delusion in the aged is the most perplexing. If paranoics, presenile delusionals, and alcoholic demented are eliminated from our category of senile dementia, there are still a number of cases in which delusions, more or less systematized, have been the troublesome feature, making the patients disagree-

able, unjust, or even dangerous to their families, though when met with in the wards of the asylum they are cases of uninteresting senile dementia. Two examples of such cases are then related. These cases, the author says, are marked examples of those that compose the paranoid type of senile dementia, in legal medicine one of the most important types of insanity.

Uterine Myomata.

Thomas S. Cullen, in the *Canadian Practitioner*, states that the endometrium is usually normal and in most instances we can open the uterine cavity with little or no danger of infection. A subperitoneal myoma frequently becomes attached to a neighboring structure and finally obtains its blood supply entirely from this source, its original pedicle becoming very small. The simple degeneration in myomata is hyaline in character and this hyaline material in turn gradually melts away leaving the spaces filled with serum, which is generally sterile. Subperitoneal and intraligamentous myomata occasionally become infected, probably as the result of some degeneration. The dependent portion of submucous myomata usually undergoes necrosis and sloughing. In adenomyomata we have myomatous tissue, with islands and rivers of normal uterine mucosa scattered through it. These islands of mucosa retain their natural menstrual function and hence at each period pour out their quota of menstrual blood. It thus accumulates and eventually causes cysts filled with changed menstrual fluid. Sarcomatous degeneration of myomata occasionally occurs and it should be borne in mind when outlining the treatment, as should the possibility of coexisting carcinoma of the uterus.

In treating myomata the surgeon's first duty is to remove the growth. The second is to sacrifice the reproductive organs as little as possible. Prior to opening the abdomen a catheter should be passed into the bladder to determine its confines. If the tubes are the seat of inflammation hysterectomy should be done. When the tubes are normal and there is no offensive vaginal discharge and the nodules are few in number and accessible myomectomy should be performed. It is not advisable to do myomectomy where the nodule is situated in the broad ligament or deep down laterally in the pelvis. It must be remembered that myomectomy is a much more dangerous operation than hysterectomy, and if the patient is weak the complete operation should be chosen. In those cases where it is deemed advisable to do hysterectomy in patients before the menopause it is advisable to leave the ovaries. Where pregnancy occurs in a uterus studded with large and small

myomata perform hysterectomy; if the myoma is cervical and would interfere with labor do either hysterectomy at once or Cesarean section later. A submucous myoma, if small and situated high up, with no discharge, is often best removed by splitting the uterus from above. In some cases the myoma can be pulled down and the pedicle ligated from below. Where a sloughing myoma exists it is advisable to give frequent douches of 1 to 2 per cent. formaldehyde solution for a few days before operating. After a careful study of many cases, and finding that the operative mortality is as low as, or even lower than, that which follows where patients are not subjected to operation, the writer feels that the only patients that should be advised against operation are those who exhibit no symptoms, or where the myomata are very small, and give rise to little or no trouble.

Sterility from Vaginal Causes.

James N. West, at a recent meeting of the New York Academy of Medicine, said that a division of sterility in women into causes due to derangement of any particular parts of the system of generation was to a certain extent arbitrary and impossible, since such derangements graded insensibly from one part to another. Still, a study of the subject in this way had its advantages, in that it concentrated the attention upon details which might otherwise be lightly considered. The part which the vagina took in the physiology of reproduction was that of the chief organ of copulation in the female; its function was to produce an ejaculation of semen from the male and retain it in a healthy condition in such proximity to the cervix that it might readily find access to its canal. The causes that interfered with its function were congenital, pathological, traumatic, and psychical. Congenital causes: Among the congenital causes the reader discussed pseudo-hermaphroditism; congenital absence of the vagina; vaginal septa and bands and double vagina; congenital atresia; unusual passages due to congenital malformations; persistent cloaca and imperforate hymen. Pathological causes: He considered the most frequent and necessarily the most important causes of sterility due to the vagina. Among them he mentioned new growths; carcinoma of the cervix; sarcoma; vaginal cysts; fibroids from the uterus or cervix occupying the vagina; syphilitic growths; inflammatory conditions resulting in abnormal secretions inimical to the life of spermatozoa. Traumatic causes: Among these he considered vesicovaginal fistula as one of the most striking. Complete procidentia was usually accompanied by sterility, but destruction of the perineum or the presence

of a cystocele or rectocele seemed to have little influence in that direction. Atresia of the vagina due to the disease of trauma might act as a bar to normal insemination; the same was true of vaginismus, due to injury or disease. Psychological causes: He said it had been fairly demonstrated in a limited number of cases by good observers that incompatibility was a cause of sterility. Under this heading might also be included many cases of vaginismus in which the distaste for the sexual act produced a reflex contraction of the sphincter muscles of the vagina of such violence as to prove an effectual bar to copulation. In the treatment of congenital malformations of the vagina when the other organs were normal, the writer thought we were justified in resorting to any reasonable surgical measure for correcting it. The treatment of pathological conditions was suggested by the nature of the cause. In the case of new growths they should be removed, but when of malignant character, conception should be guarded against. When the sterility was due to an excessive and acrid secretion of acid mucus, it might be relieved by the judicious use of antiseptics and local applications, among which the very best was nitrate of silver. Local applications of alcohol sometimes seemed to have a very beneficial effect. The relief of sterility due to traumatic causes offered a wide field of usefulness, and operations for the relief of procidentia, cystocele, rectocele, lacerations, and vesicovaginal fistula at once suggested themselves. When the sterility was really due to psychological causes the physician could offer practically no relief. Finally, each case should be carefully considered on its own merits, its etiology thoroughly established, and a definite plan of treatment mapped out and persisted in until relief was obtained.

The Congenital Origin of Hernia.

R. H. Russell, in the *London Lancet*, says that congenital hernia ordinarily signifies an oblique inguinal hernia into a funicular process which is unobliterated throughout, so that there is no barrier separating the abdominal peritoneum from the tunica vaginalis. It was not understood that the hernia was present at birth, but that it had entered a congenital sac. It was considered that the inguinal hernia in which the sac was found to be distinct from the tunica vaginalis might be safely relegated to the category of acquired hernia, and acquired hernia implies that the sac is not a developmental structure and is not therefore present at birth, but that it has been formed by the stretching and pushing down of the normal peritoneum in front of the descending hernia, the essential cause

of the hernia in such a case being a local weakness or inadequacy of the abdominal wall. Hernia descending into an open funicular process need not of necessity find its course to the tunica vaginalis completely unopposed, but on the contrary it is common for the tunica vaginalis to be cut off from the main length of the tube by an obliterated portion of varying length. The upper portion of the partly obliterated funicular process is no whit less entitled to the name of "congenital sac" than is the whole of it, but a distinctive title of some kind was called for; and as the term "congenital" had been already appropriated by one variety, the name "funicular" was given to the other. But both are congenital and funicular in an equal degree. He believes that we should no longer use the term "congenital" in this connection as denoting a variety of hernia distinct from all others. The writer says the use of the terms "total funicular" and "partial funicular" for those respectively now in common use, viz., "congenital" and funicular."

Dangers of the Menopause.

Sara E. Greenfield, in the *Womans' Medical Journal*, says that the climacteric or cessation of menstrual life is nature's first warning of old age. In order of frequency, the nervous manifestations stand first. The patient becomes irritable and easily fretted by little things. She is troubled with indigestion, insomnia, hot flashes, cold feet, palpitation of the heart, etc. If she is at all of a melancholy turn of mind, she will develop all kinds of phobias. It is best for the physician to take her into his confidence and explain to her why all these disturbances exist. Sodium bromide is an excellent nerve sedative, which produces no harmful after-effects even when it is used for a long time. Iron and other blood builders are indicated. Rest is of the greatest importance. If the patient cannot be sent away from home, then she should take a few hours rest every day, even though she cannot sleep at this time. Next in frequency to the nervous systems, and often accompanying them, is an increased menstrual flow. The physiological process of the menopause is atrophic, and there should never be an increased menstruation. The most common causes of menorrhagia are: Metritis and endometritis, uterine fibroids, relaxation of the uterine tissues, and carcinoma. In these four conditions increased menstruation is practically a constant symptom. In the majority of cases the problem of differential diagnosis is limited to the aforesaid diseases. Metritis is the most common cause of menorrhagia. In chronic cases, and in long-standing hyperplasia, there should be a thorough curettage. Sur-

geons should think twice before performing the radical operation for a uterine fibroid. In cases of prolonged or increased flow, with no other symptoms, the writer gives a combination of ergot, viburnum, and aromatic sulphuric acid with excellent results. Lastly, the writer considers cancer. There is little to expect, now, in the way of improved surgical technique, and hope lies in the earliest possible diagnosis. From a clinical standpoint, we find probably very little of anything besides the irregular menstruation in an early case of carcinoma of the cervix. The writer has no faith in a diagnosis made from uterine scrapings. It is necessary to remove a small wedge of tissue, put it into a bottle of 60 per cent. alcohol, and send it to some one who does reliable microscopic work. Delay at this time is fatal. The disease has always extended farther than is apparent to the naked eye. The lymphatics are quickly invaded, and the disease becomes systemic oftentimes before the physician has made up his mind to act or before the patient has given her consent.

Injurious Renal Mobility.

Bonney discusses in the *Edinburgh Medical Journal* this subject. He says:

Even to students of this subject the astonishing discrepancy of statements on the part of men of experience, usually gynecologists, in relation to the percentage of unnaturally movable kidneys, is most striking.

Thus Edebohl, who cannot be accused of lacking in surgical enthusiasm, found 90 movable kidneys in 500 cases subject to examination without special reference to this organ. Madsen found 60 cases in 100 examinations, Senator one case in 171 examinations, and Hilbert one case in 100 examinations. Morris makes a statement to the effect that seven to ten per cent of all women have abnormally movable kidneys; this, though more conservative than that of the more progressive gynecologists, strikes the general surgeon as an estimate of renal morbidity far too high.

A conception of what constitutes abnormal mobility and of the method of palpating the kidney influences the judgment of the individual physician. Probably the best method of examination is that described by Glenard. The patient is placed flat on the back with the thighs flexed, and a slight lateral bending of the body toward the side to be examined. The fingers of the surgeon are placed over the twelfth rib behind, whilst the thumb gently grasps the anterior parietes immediately below the costal margin. The patient being told to breathe quietly, the loin is gently compressed until the thumb can feel the anterior surface of the quadratus lumborum, whilst internally

its tip rests against the ridge formed by the spine and psoas muscle. The patient is told to breathe deeply and quietly, the compression of the loin being maintained. With the descent of the diaphragm the lower pole of the kidney is projected against the barrier formed by the approximated fingers and thumb. After the examiner clearly identifies the push of the kidney, the patient is told to take a deep inspiration, and as the kidney descends the thumb is slightly raised, when the organ then passes either wholly or partly within its grasp. At the height of inspiration, the thumb with a sweeping movement upward sharply compresses the loin against the fingers behind, thus "nipping" the kidney. If the lower end of the organ be so nipped the kidney recedes upward under the shelter of the ribs, and cannot be arrested in the loin. This is the first degree of renal mobility.

If the organ be caught exactly at its middle, it can be held so in the loin, though this causes pain. This is the second degree of renal mobility.

If the upper end be grasped the kidney is forced downward, and the compression of the loin prevents the respiratory return of the organ. This is the third degree of renal mobility.

The standing position should always be adopted after the examination in the horizontal position, the patient leaning slightly forward and toward the side to be examined.

There is no consensus of opinion as to what constitutes abnormal mobility of the kidney, though all agree that abnormal mobility is not necessarily injurious, at least it is not always attended by symptoms.

He says, as the result of the systematic examination of 100 consecutive patients, that in but 9 did he fail to feel the right kidney, in 41 the left kidney. Both kidneys exhibited the third degree of mobility in 9 cases, the right kidney alone in 40 cases.

The author divides the cases of abnormal renal mobility under three heads: (1) Those in which the condition is solely one of exaggerated diaphragmatic movement. Expiratory return is present and inward rotation absent. These cases give rise to no symptoms. (2) Those in which the diaphragmatic attachments of the perinephric structures are relaxed or gone, with consequent failure of respiratory return, but as the perinephric and retroperitoneal fat still continues to support the organ from below, inward rotation is not present. These cases cause no symptoms, or those which are very slight. (3) Those cases in which, from loss of both its upper and its lower supports, the kidney drags directly upon its pedicle, as shown by inward rotation and absence of

respiratory return. Such cases are always accompanied by symptoms, and it is to them that the expression "injurious renal mobility" peculiarly belongs.

The earliest and only constant symptom of an injuriously movable kidney is a dull, aching pain in the back, and this may be the only symptom. This pain is placed at the level of the upper lumbar vertebra, and radiates transversely around the waist on the side corresponding with that of the offending organ. It may be radiated downward along the outer half of the abdomen and thigh. This pain remits irregularly, and is relieved by recumbency, hence it usually comes on during the day, the patient feeling well in the morning on getting up. There may be violent attacks of spasmodic pain due to renal compression.

Drugs are, of course, useless. Purgatives are of some value, since the pain is always accentuated by constipation. Diet and hygiene, which increase the body fat, are serviceable, since thus the perirenal support is increased.

A properly fitting belt can be of the greatest service, and may be curative; it must be fitted as carefully as a truss, and should always be applied in the recumbent posture. The belt should grasp the loin in front of the abdomen, and should be provided with an elastic band, sloping from behind downward and forward and fastening in front with a buckle, thus imitating by its compressive action the thumb and fingers of the examining surgeon. In all cases not relieved by the belt nephropexy is indicated.

This cannot be expected to give absolute relief, since it does not restore the organ to its normal condition of free mobility, but simply fixes it in the place it should occupy. In neurotic patients there often develops a neuralgic condition of the scar, or disturbed sensations incident to division or accidental ligature of the last dorsal nerve, which cause much more suffering than the condition for which the operation was undertaken.

There is, moreover, a distinct mortality in nephropexy, which even though small should lead the surgeon to suggest conservative measures rather than to insist upon a somewhat formidable operation.

On the Late Effects of Typhoid Fever on the Heart and Vessels.

Thayer (Amer. Jour. Med. Sci.) says that the heart and vessels in 183 individuals who have passed through typhoid fever at the Johns Hopkins Hospital within the last thirteen years has revealed the following facts:

1. The average systolic blood pressure in these old typhoids was appreciably higher

than in control observations upon healthy individuals.

2. The higher average of the blood pressure was constant in every decade.

3. In many instances among the old typhoids the blood pressure exceeded appreciably the limits of what is usually regarded as normal.

4. The radial arteries in the old typhoids were palpable in a proportion nearly three times as great as that found in control observations upon supposedly healthy individuals who had never had the disease.

5. The average size of the heart was greater among the old typhoids than in the same cases at the time of admission to the hospital. The difference held good also when the cases were classed according to age by decades.

6. Cardiac murmurs were heard with considerably greater frequency among the old typhoids and in the same cases during the attacks.

7. In eight cases where, on discharge from the hospital, the heart was considered normal, subsequent examination revealed hypertrophy, with mitral insufficiency. One case showed a possible mitral stenosis; one an aortic insufficiency; one a striking general arteriosclerosis, with hyper-tension.

8. In one case an aortic diastolic murmur was present four months after discharge, but had disappeared five months later.

9. Those patients whose pulse during the disease was remarkably rapid or irregular, showed, in general, on later examination, a blood pressure among the common average for the old typhoids. In other respects, however, their condition differed but little from the general run of cases.

10. Those cases in which a cystolic murmur at the apex of the heart was observed during the attack showed later an increase in the blood pressure and in the size of the heart, as compared both with the mean of the observations made upon the same cases on admission to the hospital and with the general average for the old typhoids. Nearly one quarter of those cases in which during the attack, systolic apical murmurs were detected, showed, on later examination, evidences of organic heart disease. Indeed, the majority of all the cases of organic cardiac lesions among the 183 old typhoids came from this small group of 31 cases.

Removal of External Hemorrhoids.

Thomas Charles Martin (Cleveland Med. Jour.) uses two hypodermic syringes with the finest needles, having long oblique points. A one-tenth of 1 per cent solution, which is administered at a temperature of about 98 deg. F. The integument in the

proposed line of incision and the tissues beneath the base of the tumor should be rendered uniformly edematous by the endermic injection. The oblique portion of the needle's point should be laid on the skin, which is drawn tense, and by a movement of the fingers only, the needle should be pushed steadily in till its mouth is buried in the integument. The piston is now pushed and as the welt rises in advance of the needle's point, the needle should be advanced in the plane of the integument. Before making the incision a row of continuous sutures should be placed in the infiltrated area around the growth, then cut and converted into interrupted sutures, to be tied after the tumor has been dissected away.

A Case of Syphilitic Convulsions Preceded by Somnolence.

W. B. Bennett (Brit. Med. Joura) reports a case of syphilitic convulsions preceded by somnolence lasting over five months. The somnolence apparently replaced the usual headache. Other symptoms were profound stupor and motor aphasia. The patient was a married man of thirty-four. The attack began with aphasia, soon followed by coma, stertorous breathing, and convulsions, starting in the right arm, leg, and face, and becoming general. He was given 10 grains of calomel and a mixture of pot. iod. (15 grains) and liq. hydrarg. perchlor. (1 drachm) every three hours. In the evening he got out of bed and evacuated the rectum and bladder naturally. He seemed, however, to be unconscious, and fell again into a heavy sleep. The next day he spoke a few words. Ten days later he went away for a week, and then returned to business. There was a history of a chancre eight years before, but none of secondaries. A tendency to sleep had preceded the present attack for five months. The patient recovered after the above attack under antisyphilitic treatment.

The writer believes that such cases are rare, but Sir William Gowers mentions a tendency to somnolency lasting for weeks as being an occasional premonitory symptom in cerebral thrombosis. The lesion was probably obliterative endarteritis.

Convulsions are frequently caused by cerebral syphilis, and Fournier lays stress on this symptom when occurring in persons over thirty. They may be caused, like aphasia, by advanced arteriosclerosis, but are rare in atheroma, being more often due to meningeal growth of inflammation. The above case is interesting on account of the absence of the more common symptoms—headache and hemiplegia—together with apparent complete recovery.

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Hay Fever.

Somers, at a recent meeting of the Philadelphia Co-Medical Society, reviews Dunbar's work on this subject and gives his own experience with the use of serum from animals inoculated with the pollen toxin of golden-rod in ten cases. Admitting that the number is too small for positive conclusions, he suggests that the experience obtained from the golden-rod antitoxin indicates that: The serum produces prompt and positive amelioration of the symptoms of fall hay fever in the majority of cases. In a smaller number this favorable result is soon accompanied with the complete disappearance of the affection. Where slight or no action is seen after its use, pollen as an etiological factor does not predominate. When results are obtained, it favorably influences all the manifestations of hay fever. The author is unable to state from personal experience the effect of the serum on hay fever occurring at other times of the year, or its effects when administered in advance of the attack, yet when given during the attack, irrespective of its severity, it produces marked palliation rather than absolute cure. Its effects on future attacks remain as yet unknown. The serum in powder form is slightly soothing to the nasal mucosa, has but little influence on the other

symptoms of the affection, and in occasional cases it may act as a direct irritant. Finally, as a result of larger experience, especially with hay fever occurring at other times of the year, it may become necessary to modify some of the opinions in regard to this antitoxin.

The Artificial Feeding of Infants.

Hutchison in the London Medical Lancet, discusses this question, and emphasizes the following points:

(1) The first essential in the artificial feeding of infants is to have a definite plan upon which to go and to avoid haphazard procedures (2) Diluted cow's milk, condensed milk, and peptonized milk may be regarded as the positive, comparative, and suppurative of digestibility respectively, and should be tried in that order until the digestive power of the child is suited, due regard being paid to the details of administration. (3) Periodic weighing of the child is the only test of the success or failure of the food selected. (4) In cases in which even peptonized milk fails to give good results great benefit often follows the administration of gray powder, even in cases in which there is no reason to suspect a syphilitic taint. (5) In spite of all care in the use of the methods which he advocaest

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Localization of the Mental Faculties in the Left Prefrontal Lobe.

Dr. Phelps, in the American Journal of Insanity has made observations connected with the localization of mental faculties. After careful analysis of all the cases in his practice, and perusal of considerable literature on the subject, the author considers himself justified in formulating the following three propositions: 1. The more absolutely the lesion is limited to the left prefrontal lobe the more positive and distinctive are the symptoms of mental default. 2. The integrity of the mental faculties remains unimpaired in a lesion of the right frontal lobe, though it involves the destruction of the entire lobe, or even extends to the entire hemisphere. 3. The exceptional instances in which seemingly opposite conditions exist are always reconcilable, on

more careful examination, with the assertion of an exclusive control of the mental faculties residing in the prefrontal region of the left side.

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there remains a residuum of cases in which progressive wasting persists. Many of these seem to be babies who are unable to digest the casein of cow's milk in any form. (6) In such a case one should try to procure a wet-nurse for the child, and, failing that, one must eliminate casein from the diet by making whey the basis of the feeding mixture. (7) The use of a patent food as the sole article of diet for a baby is rarely if ever necessary so long as cow's milk can be obtained either fresh or condensed. (8) If a child is unable to digest much cow's milk it is often worth while to try the effect of adding a little starchy food to the diet even at an early age, for inability to digest milk appears to be sometimes accompanied by an unusual capacity for the conversion of starch.

Human and Bovine Tuberculosis; the Possibility of Human Infection from Cattle.

Raw (*British Medical Journal*) mentions the fact that phthisis pulmonalis is essentially a disease of young adults. Of 2,000 cases only 6 showed affection of the lymph nodes and joints; whereas, tuberculous joints and lymph nodes, spinal disease, and abdominal tuberculosis are essentially diseases of infancy and rarely accompanied by true phthisis pulmonalis.

He believes that human and bovine tuberculosis are separate and distinct diseases, as shown by Koch, and that the human body is susceptible to both, the bovine tuberculosis causing the manifestations seen in infancy. The two diseases are so rarely seen together that he suggests an antagonism against each other, and the possibility that bovine tuberculosis may confer an immunity against human tuberculosis.

The clinical picture of cattle dying of tuberculosis is almost the exact counterpart of children dying of *tabes mesenterica* and abdominal tuberculosis. At least 70 per cent. of children dying of tuberculosis have diseased mesenteric lymph nodes. While the bacilli of human and bovine tuberculosis are morphologically identical, the cultures of the two diseases are different. As affirmed by Ravel, the tubercle bacillus from bovine sources has in culture fairly constant and persistent peculiarities of growth and morphology by which it may tentatively be differentiated from that ordinarily found in man. Several cases are described in which calves were successfully inoculated by cultures taken from the mesenteric lymph nodes of children.

The Tube and Uterus in Menstruation.

Moltzer, in the *British Medical Journal*, states that he has examined healthy tubes removed from two patients during the men-

strual period. In one case there was an ovarian cyst. Before the parts were disturbed, a drop of blood was seen issuing from each ostium, and the tubes were markedly hyperemic. The vessels were found on microscopic examination to be dilated; the lymphatics contained many multinuclear leucocytes, which also lay in quantities under the epithelium. The epithelial cells showed vacuolation. In no part of the tube were they seen to be broken down or deficient. Towards the ostium hemorrhagic infarcts and hyperemia were more marked than proliferation of leucocytes. There was no true submucous hematoma. As the inner half of the tubal canal was quite free from blood, the hemorrhage could not have originated in the uterus. There was no evidences of catarrh or other inflammatory changes, and as the veins in the tube were not more engorged than the arteries, the appearances actually detected could hardly be due to venous stasis caused by the ovarian tumor. In the second case, the fimbriae were stained by free blood and the microscopic appearances of the tube substantially the same as in the first. He concludes that the tube naturally has a share in menstruation. Blood manages to escape into the lumen without breaking down the epithelium, which is just what De Sinety observed in the menstruating uterus.

Nasal Suppuration.

Adolph Bronner (*Quarterly Medical Journal*) calls attention to the following points:—(1) That nasal suppuration is extremely common, and is followed by dangerous complications; (2) that it is generally due to localised disease of the bone, or affection of one or more of the nasal accessory cavities; (3) that in cases of nasal suppuration in children the discharge should always be carefully examined for diphtheria bacilli; (4) that cases of syphilitic rhinitis are often fatal if not treated locally; (5) that in most cases of nasal polypi there is a local disease of bone, or of one or more of the accessory cavities, especially the ethmoidal cells; (6) that in these cases the middle turbinal bone and the ethmoidal cells should be energetically scraped.

Good Health or No Marriage Certificate.

Chicago's "Progressive Health Club" has memorialized President Roosevelt in behalf of the establishment of a federal bureau "to teach citizens the ideal possibilities of marriage." It is desired by the club that federal legislation make it necessary for a man to produce a clean bill of health and prove that he has never been convicted of crime in order to secure a license to marry.

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Gastroptosis: Treatment by Beyea's Operation.

Beyea (*Pennsylvania Medical Journal*) recommends an operation that, in the cases in which it has been done, promises remarkable results. The danger of the operation, with the best aseptic and antiseptic technique, is little or no more than that of a simple exploratory celiotomy.

The abdomen is opened midway between the xiphoid cartilage and umbilicus by an incision three inches in length. Three rows of interrupted silk sutures are placed from above downward, and from right to left through the gastrohepatic ligament or omentum and gastrophrenic ligament. When secured, these sutures form a broad transverse fold or plication in and shorten these ligamentary supports, and elevate the stomach to normal position. Bier has operated upon four cases in a similar manner except that fewer sutures were employed, and in two of the cases the shortening of the gastrohepatic ligament was supplemented by passing two sutures through the serosa of the lesser curvature of the stomach and then through the capsule of the left lobe of the liver. In all, seven cases have been operated on. These had suffered from five to ten years with characteristic and very severe dyspeptic and neurasthenic symptoms. In every case the severe symp-

toms of gastroptosis rendered the patients chronic invalids and incapacitated them for their occupation and social duties. The convalescence was normal, the suffering not being more than after any exploratory celiotomy. Beyea's patients were kept in bed in the recumbent position for from four to six weeks after operation, and on a special diet. Six of the patients have been observed from sixty-five days to three years, and in every case the improvement in health has been very remarkable. The relief of the symptoms has been complete. Any character of food is taken. Lasting weight has been gained, beginning at once.

In no instance, regardless of the length of time which had elapsed since operation, had the stomach changed in position. In three the line of greater curvature of the stomach is from one to two inches above the umbilicus, and in the other three of Beyea's cases from one to one and a half inches below the umbilicus.

Serum Therapy.

Newcomb, in the *Courier of Medicine*, discusses the progress made in this therapeutic field during the past year. He says:

"Cairns reports the use of antidiphtheritic serum in advanced and malignant cases of diphtheria by the intravenous route, and advocates the use of larger doses for subcu

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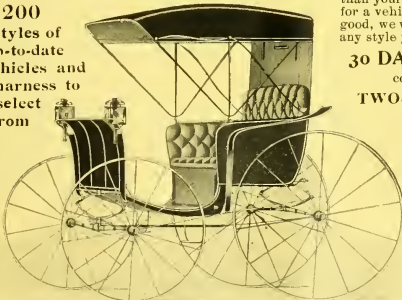
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taneous and intravenous injection. For the former method his doses varied from 3,000 to 20,000 units, and for the latter from 20,000 to 35,000 units.

"Morse gives negative result to his treatment of pneumonia in infancy by the anti-pneumococcic serum. Other observers have used the antidiphtheritic serum in pneumonia with apparent benefit.

"Hirschlaff of Berlin has prepared a serum for the treatment of acute and chronic morphine poisoning which promises to become of use. It is made from the blood of rabbits which have been subjected to the influence of morphine for from three to five months; and Grofreddi has prepared a similar substance from the blood of dogs.

"In regard to tetanus antitoxin Packard and Wilson estimate that since its introduction the mortality has been decreased from a general average of 80 per cent. of all acute cases to from 40 to 50 per cent., and in chronic tetanus from 40 to 20 per cent. However, one fact stands predominant, and that is, that good results are not to be expected from antitetanic serum, unless given in the earliest stages of the infection, and that the best results are obtained only when it is administered immediately after the possible exposure.

"Josias announces good results in the treatment of typhoid fever in children by Chantmesse's serum in all cases where its use was begun early, and neither local inflammation nor constitutional disturbance

was observed to follow its administration.

"The serum therapy of dysentery has hardly come up to expectations, and is yet not so far removed from the stage of experimentation that definite judgment can be passed upon its utility.

"Favorable reports have been made by several observers upon the use of Dunbar's hay-fever antitoxin.

"Yersin's serum for bubonic plague is of the greatest value, being both antitoxic and bactericidal, and should be used early in the disease both subcutaneously in the neighborhood of the bubo and also intravenously in large doses. Haffkine's serum has likewise proven of great value as an immunizing agent during epidemics."

Surgery in Tumors of the Brain.

Chas. H. Frazier, (The St. Louis *Medical Review*) concludes an article with this resume:

1. All measures recognized as prophylactic of shock should be observed stringently. In these we have the most effectual means of reducing the mortality. The most important of them are, (a) the avoidance of prolonged operation; (b) the prevention of excessive hemorrhage, and (c) the avoidance of unnecessarily rough manipulation of the brain substance.

2. A given area of brain can be exposed with the minimum degree of traumatism and greatest economy of time by the electric engine.

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operations upon the brain is ineffectual and not unattended by danger. It should be reserved for extreme cases, and practiced on one side only.

4. Observations should be made upon the blood pressure immediately before and at frequent intervals during the operation. Object of same twofold: (a) as the most reliable index of patient's condition; (b) as the only exact method of determining whether operation should or should not be carried out in two stages.

5. Two-stage operation is indicated when there has been a decided fall in blood pressure after the relief from intercranial tension, such as follows reflection of the Wagner flap and dura.

6. Lumbar puncture as a means of relieving pressure is a temporary, not to say dangerous, procedure.

7. Bulging of the brain is one of the most embarrassing features of cerebral operations. A distinction may be made between that which occurs immediately after reflecting the dura, "initial" bulging, and that which follows as a result of subsequent exploratory manipulation, "consecutive" bulging.

8. "Initial" bulging is due to the increased tension exerted by a tumor. It is

not always present, is often not excessive, and is not likely to be followed by "consecutive" bulging.

9. "Consecutive" bulging is due to the cerebral edema set up in normal brain tissue by trauma inflicted by the exploratory manipulations. Consecutive bulging far exceeds in magnitude the initial bulging, and suggests the absence of a tumor of considerable size at the seat of operation.

10. In order to avoid this "consecutive" bulging, which is a most embarrassing feature of these operations, exploration should be carried out in the most expeditious manner.

11. When the edges of the dural wound cannot be approximated without undue tension or without great laceration of the brain substance, the gap should be closed by a graft taken from the pericranium, providing the tumor has not been found and there is reason to question the accuracy of the diagnosis.

12. When there is every assurance of a tumor being present, but it proves to be inoperable or was imperfectly localized, no attempt should be made to close the dura, as in so doing the best possible palliative effects of the operation would be counteracted.

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13. Palliative operations should not be regarded merely as operations of propriety, but should be considered imperative whenever the tumor cannot be found or cannot be removed.

14. A statistical study of the results of the last five years is encouraging. The mortality, both immediate and subsequent, has been reduced materially. Recurrence after operations for malignant growths of the brain is no greater than after operations for malignant growth of other structures.

Gataphoresis in the Treatment of Gout, Rheumatism, and Rheumatic Arthritis.

Begg (*Edinburgh Medical Journal*) employs currents of as much as 25 to 30 milliamperes, using at first stable applications and afterward labile ones.

It must be at once clear that this plan can only do good in certain stages of the disease. In gout it is clearly asking too much to expect it to dissolve and remove extensive and old chalky deposits, but any deposit, however slight, forms a nucleus for the precipitation of fresh insoluble material, and, although this may be continually going on to a slight extent, it must be copiously and rapidly precipitated with each fresh attack of inflammation. This is the time when we can do good, both by soothing the pain and by the action of the positive electricity, checking the inflammatory process, while all the time it is driving a stream of potassium bicarbonate into the tissues of the joint.

Dr. Luff has shown by experiment that the potash salts hinder the precipitation of the potassium biurate from the unstable sodium quadriurate circulating in the blood. In applying it thus direct to the joint we do our best to keep the precipitation from taking place, and give the vessels a chance of removing it. Even in old and extensive deposits it may help matters. A recent case supplied the author will prove this. A gentleman arrived for treatment at the end of a long, lingering attack of gout; feet and hands were extensively involved, and many joints the seats of large deposits. The distal phalangeal joint of one finger was so distended, the skin over it so discolored and stretched, that it looked impossible to prevent its giving way. Yet there was improvement after the first sitting, and at the end of a week all danger of that annoying accident was at an end. Some removal of deposit must to all appearance have taken place, as well as cessation of inflammation.

In rheumatoid arthritis, when once bony outgrowths have deformed the joint, or dislocations have taken place, we cannot expect to do much good. Not with our pres-

ent views as to the nature and cause of the disease can it be seen how the alkali can be of much service; but the writer has proved to his own and to his patients' satisfaction that this method does great good in the earlier stages both in reducing the swelling and soothing the pain. The earlier it is used the better. The writer has noticed that as the swelling goes down the pain in the joint may for a time be increased. It was in this class of cases he had patients willing to risk all the damage from the negative electrode, had it been necessary, in order to obtain again the good results to the joints.

In rheumatic arthritis, in addition to the soothing and massage effects, there is a probability of the alkali also being useful, and the method can help us at any stage of the disease.

Creosote Carbonate in Pneumonia.

Scott and Montgomery, in the *Therapeutic Gazette*, report 74 cases of croupous pneumonia, 67 of which were treated with the carbonate of creosote. Adults were given from ten to fifteen minims in capsule every four hours; children receiving only one-third as much, three to five minims, every four hours. Of these 67 cases ten died, a mortality of 13.9 per cent. The remaining seven cases were not treated with carbonate of creosote, and only one died, a mortality of 14.3 per cent. Still they are not satisfied that they have obtained as much good from the use of the creosote as it is possible to obtain and they urge its further use. They conclude that

(1) Carbonate of creosote causes no irritability of the stomach; in no case was there vomiting or any disturbance of the digestion; no disturbance of the urine was noted.

(2) The degree of toxemia in all cases, barring the fatal ones, was mild; this is a difficult point to estimate, the extent of lung involved, temperature, etc., having little or nothing to do with it.

(3) In the cases treated, pseudocrisis were common (15), but bore no relation to the crisis or the mortality.

(4) The mortality percentage (14.9) secured in 67 cases treated with carbonate of creosote does not corroborate the unusually low figures secured by Wilcox, Van Zandt and others; nor does this percentage -14.9 mortality—prove that the results are due to the treatment by creosote carbonate, as equally good results have been secured in past years by other methods in the same hospital.

(5) The study of the clinical effects of carbonate of creosote should be continued; the dosage should be increased, and the effect upon the toxemia carefully watched.



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Syphilis and Marriage.

Marshall, in the *Edinburgh Medical Journal*, suggest rules by which the profession can be guided in giving advice as to when a syphilitic subject may or may not marry. The author states that the disease must be regarded as an insurmountable obstacle to marriage, but merely as a temporary cause of prohibition. Fournier lays down the following conditions of admissibility of marriage: (1) Abscess of actual lesions; (2) advanced state of the disease; (3) a period of immunity after the last signs; (4) the quality of the disease must

not be severe; (5) treatment must have been prolonged. He gives three or four years after the onset of the disease as the minimum time before marriage can be sanctioned, and even then only if the above conditions have been fulfilled. Hutchinson gives two years after the onset of the disease.

The first condition—the absence of lesions—requires no comment. However, Cullerier has reported some cases to show that the foetus may escape infection even if the father is in a contagious state: yet the question in these cases arises as to what

proof is there that the syphilitic husband was the father of the child? The possibility of the wife being impregnated by another man free from syphilis will always be a stumbling-block in the study of the disease. The second point—the date of disease—is important; the more recent the disease in the husband, the greater the chance of infection; relapsing erosions are especially dangerous, consisting as they do of slight lesions affecting the penis or mouth. There is a gradual decrease and final extinction of the power of infection of infants by syphilitic parents. The first pregnancies result in abortions; later ones end in the birth of syphilitic children: after a time healthy children are born. This is known as “Diday’s law of decrease.” Exception has been made to the universal truth of this law, owing to the fact that a syphilitic child is sometimes formed after a healthy pregnancy: but here, again, the same difficulty is to be contended with by the possibility of another father. The third point—the period of immunity since the signs of syphilis—should coincide with the suspension of treatment. According to Fournier, this should be from one and a half to two years, during which time no treatment has been given. The fourth point concerns the severity of the disease. In severe cases the period of probation should be prolonged; but, on the other hand, it is a mistake to relax the other rules because of the benign character of the disease; for it is well known that cases originally benign may be followed by severe later symptoms. The last point deals with treatment. Fournier advises treatment for three or four years by the intermittent method. He argues that a chronic disease should be dealt with by chronic treatment. If the candidate for marriage satisfies all the above rules, marriage may be permitted; but if all the conditions are not satisfied, marriage ought to be postponed; each case, however, must be judged by itself and the probabilities carefully considered. If a man develops signs of syphilis after marriage, the contagious lesions should be cauterized with the acid nitrate of mercury, and a severe course of mercurial treatment undertaken; pregnancy should be avoided. If the wife is pregnant, but has no signs of syphilis, the course to adopt is a matter of opinion. Ricord was against intervention, and preferred to leave the result to Nature. Fournier advises intervention in most cases; if the wife has had previous abortion, mercurial treatment should be given; if it is a case of first pregnancy, the course of action depends on the age and quality of the disease in the husband, and the treatment he has undergone. If the conditions are bad

in the husband, mercury should be given to the wife in small doses. If the wife is contaminated and pregnant, treatment of the mother often prevents abortion, and may lead to the birth of a healthy child. The treatment of the wife is often a cause of much trouble and anxiety to the doctor, since the husband naturally wishes to keep the disease a secret, and under such circumstances much diplomacy is required. If the mother is syphilitic, she should suckle her syphilitic child, as the consequences of giving a syphilitic child to a wet-nurse may be disastrous. The question of suckling becomes a matter of opinion when the mother of a syphilitic child has no signs of syphilis. The best rule is for the mother to suckle the child unless she has cracked nipples, or the child has sores about the mouth.

Puerperal Eclampsia.

W. E. Fothergill, in the *Med. Chronicle*, says that in attempting to forecast the end of a case of actual eclampsia it is not wise to attach too much importance to the number of fits, as they not only vary with the quantity and nature of the poison, but also with the nervous equilibrium of the patient. The occurrence of convulsions after labor points to the persistence of a grave state of affairs, and should never be treated lightly. The most favorable cases are doubtless those in which convulsions occur actually during labor and initiated by some definite external stimulus such as obstetric manipulation. The quantity of albumin in the urine is a false guide, as in certain cases there is no albumin; the quantity of urea affords a much more reliable criterion. When there are symptoms and physical signs of toxemia during pregnancy, active treatment should never be omitted. Rest in bed, copious drinks of water, milk diet, purgatives, rectal lavage, hot baths and hot wet packs are all useful. Thyroid substance is of no use in some cases to excite diuresis. The urine should be examined periodically and if the output of urea is low simple measures should be taken to increase it, and if these fail, more active ones. If the patient fails to respond to treatment, pregnancy should be terminated. In the presence of convulsions and coma, saline transfusion and bleeding are indicated in addition to more ordinary aids to elimination. Morphine may be given to reduce irritability of the nervous system or to aid elimination. Rectal lavage and hot wet packs may be used during coma, as well as before and after. The slow induction of labor before an attack has occurred, or after one attack has been tided over, is the best method of terminating the pregnancy. Accouchement forcé is objectionable.

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Groupous and Catarrhal Pneumonia In Infants.

S. Vere Pearson, in the *London Practitioner*, believes that not only are these different diseases, but in the great majority of cases they can readily be distinguished the one from the other. Occasionally, however, it is not very difficult, but impossible to differentiate between them. The most important differences are the following: *Croupous pneumonia* in the infant differs in few essential features from the same disease in an adult. It is characterized by its sudden onset, its continued high temperature and hurried respiration, its critical ending and its rapid resolution. The consolidation of the lung is lobar; it is the result of fibrinous exudation. The physical signs of the pneumonia develop rapidly, and are well-defined. Expectoration and rigors are practically never seen in infancy, but vomiting at the onset is common. Herpes is less frequent than in adults, and cough is seldom distressing; also it is noticeable that labored breathing, inspiratory dyspnea, and cyanosis are usually absent, or, if present, seldom prominent. A hot

skin and some prostration are generally observed. The prostration is great early in the disease, and afterwards, as a rule, steadily diminishes. Convalescence is rapid, and the prognosis is good. Empyema and otitis media are common complications. *Broncho-pneumonia*, although including several distinct varieties, usually presents well-marked features, which make up quite a different clinical picture from that occurring with croupous pneumonia. The onset is more gradual; the disease is often secondary to bronchitis, or one of the exanthems. The temperature undergoes marked remissions; the course is prolonged, resolution is slower, and the disease ends by lysis. The consolidations of the lung are lobular, and are produced by a cellular exudate; and the signs to which they give rise are generally mingled with signs of bronchitis. Signs of consolidation are slower to develop, and are often ill defined. Cough is more constant and distressing than in croupous pneumonia. Cyanosis is common; and real dyspnea, often with some recession of all the soft parts of the chest, is noticeable. Prostration is greater than in croupous

pneumonia, and steadily increases. Convalescence generally proceeds gradually, and the prognosis is bad. Empyema is a rarer complication, and when it occurs it is usually smaller than that which arises as a complication of croupous pneumonia. Other important points of difference between the two forms are:—Broncho-pneumonia is more frequent in delicate, rickety, or debilitated children, whereas croupous pneumonia very often attacks those previously healthy. In broncho-pneumonia the bacteria associated with the disease are various, although the pneumococcus is much the commonest: but in croupous pneumonia the pneumococcus is practically always the cause of the disease. Relapse in broncho-pneumonia are not infrequent, which is not the case with croupous pneumonia. He describes the difference between the two affections. The statement is made that the prognosis is very different. Croupous pneumonia in itself is not any more serious in infants than it is at any other period of life. In the author's opinion it is less serious. Complications are rather commoner than in adults, otherwise the prognosis would be very good indeed. The majority of infants with croupous pneumonia recover. Holt estimates the death rate at 4 per cent., Henoch records seven deaths out of 64 cases, or 11 per cent. From these and other statistics the author estimates it to be about 12 per cent., which is below the death rate from this disease at all ages, estimated by Taylor at 17 per cent. In broncho-pneumonia we have to deal with a very different state of affairs. Holt gives the average mortality of the broncho-pneumonia in patients under three years of age as 55½ per cent. Practically all these cases die from the disease itself, and not as the result of any supervening complications. This mortality varies somewhat with the age of the patient, and with the nature of the broncho-pneumonia in respect to its origin. The younger the patient, the worse the prognosis. Broncho-pneumonia, secondary to diphtheria, acute ileo-colitis, or scarlet fever, is practically always fatal: that secondary to whooping cough is more fatal than that secondary to measles. The primary broncho-pneumonias are the least serious.

Creosote Carbonate in the Treatment of Pneumonia.

Wilcox (*American Journal of the Medical Sciences*) writes as follows on this subject: "Within two years Cassoute and Congier reported that after continuous administration of fairly large doses of creosote carbonate (containing 91 per cent. of creosote and made from it by the action of nascent carbon dioxide) in most cases a typi-

cal fall of temperature occurred during the first 24 hours of treatment, and if the remedy was persisted in for a sufficiently long period of time the apyrexia became permanent. Relapses and sequelæ, so frequently seen under other methods, were entirely absent. The daily dose of creosote carbonate was from 2 to 4 dm., the dose interval being six hours. So soon as the temperature reaches normal, the amount is reduced to one-half, and this is continued so long as auscultatory signs persist. My own experience covers 33 cases, with no deaths. The disease terminated by lysis in nine, by crisis in 24. To summarize: the treatment should consist in the continuous and generous administration of creosote carbonate, careful adjustment of mechanical conditions, thorough evacuation of toxins by all possible ways, temporary supplemental oxygen by inhalation, and liquid diet until physical signs disappear. To be avoided are: antipyretics, opiates, ill-advised external applications and slowly acting heart remedies, as digitalis."

Tuberculosis of the Ear.

Dr. Grimmer, according to the St. Louis Clinique draws the following conclusions;

1. The mucous membrane of the middle ear and the drum may be the seat even of advanced tuberculous lesions without any evidence of the disease upon the external surface of the membrana tympani.

2. Of the three layers of the membrana, the middle, or fibrillary, opposes the most resistance to the tuberculosis infiltration. It yields only after ulceration of the mucous layer. This fact explains why there are sometimes several perforations.

3. Idiopathic tuberculous otitis is rare. We should only admit its existence in the absence of any tuberculous focus in the vicinity. Adenoid tumors, it should be remembered, are very frequent points of entry and localization.

4. Many cases of otitis complicated by otitis of the petrous bone are of tuberculous origin, especially in children below the age of five years (65 per cent.).

5. Subperitoneal inoculation and microscopical examination should be employed in determining the nature of the disease. Examine the fungosities of the middle ear, the periauricular glands, and adenoid tumors when present.

The most characteristic clinical symptoms of tuberculous otitis are the absence of pain in the ear, the precocious paralysis of the facial, the multiple perforations, the pale aspect of the fungosities of the meatus and antrum, and the hypertrophy of the mastoid ganglion.

7. The sequestra, the paralysis, and

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Infants and Children



Lambert Pharmacal Co. St. Louis

late caries have not the same value from the diagnostic point of view. A cholesteatomatous otitis is never tuberculous.

A Case of Acute Sulphonal Poisoning.

Hind, in the London Lancet, reports the case of a woman aged 27, suffering from melancholia, who took 365 grains of sulphonal in the form of tablets. When first seen the patient was comatose and could not be aroused. The pulse was 80 and feeble, the respirations 15, and the temperature 98 deg. F. The corneal, the knee-jerks, and the radial reflex were absent. The pupils were slightly contracted and reacted sluggishly. The stomach was washed out. The urine was drawn by catheter and was found clear and abundant. When seen in the evening the condition of the patient was unchanged excepting that the corneal reflex had returned. She continued in a semicomatose condition, though she could be aroused to take hot coffee. On the morning of the second day cyanosis set in. At that time the pulse was increased and the temperature rose to 103.5 deg. There were no physical signs of pneumonia. On the third day the patient was improved. A sweet chloroform-like odor was noticed on the breath soon after taking the dose, and with the first urine that was evacuated the same odor was obtained. On the fourth and fifth days cerebation was markedly interfered with and the speech was staccato. Eight days after the taking of the dose she was mentally more active, and this marks the date of convalescence.

Arthritis Deformans in Children.

Abt, in the Wisconsin Medical Journal, reviews this subject: Two varieties of arthritis deformans in children are observed. In the first there is enlargement of joints with enlargement of the superficial lymph nodes and the spleen. The joint enlargement seems to be due to thickening of all the tissues about the joint without notable hypertrophy of the bones or bony grating. In the second variety the lipping of the joints and bony grating occur without the enlargement of lymph nodes or spleen. An instance of this kind is given in detail. The patient was a boy ten years of age. The first attack occurred after exposure to rain and cold during a ride on an express wagon. The wrists, phalangeal joints, knees and ankles were affected by the process. The enlargements of the joints seemed largely due to bony thickening.

A Supposed Cause of High Tension Pulse in Nephritis.

W. H. Thompson (Association of American Physicians) said:

1. High tension pulse occurs too early in

nephritis to be due to any other cause than the presence in the blood of a general vaso-constricting agent, similar in its properties to adrenalin.

2. Such an agent would also produce constriction of the renal vessels and general shrinkage of the kidneys, causing interference with the excretion of urea.

3. Prolonged presence of such an agent in the blood would lead ultimately to endarteritis with degeneration of the vascular walls and to cardiac changes.

4. Acute cardiac dilatation may occur from the effects of such a general vaso-constricting agent in the circulation before extensive alterations in the blood vessels have taken place.

5. Aconite is the best vaso-dilator in nephritis, much more effective than the nitrites. Reports of marked increase in the excretion of urea following its administration.

Miscellaneous.

H. Pauly: A Contribution to the Knowledge of Adrenalin.

In a continuation of his former paper on Adrenalin Prof. Pauly takes emphatic exception to the empirical formula, $C_{10}H_{13}NO_3 \frac{1}{2}H_2O$, proposed by Prof. Abel (Berichte, Vol. 36, p. 368), supporting rather the formula, $C_9H_{13}NO_3$, first proposed by Aldrich (The American Journal of Physiology, Vol. 5, 457).

In a former paper Abel was very curt (Berichte, Vol. 37 p. 368) with Pauly's analytical results, informing the readers that it is not sufficient to obtain an ash-free preparation, it must also be free from organic phosphorus; furthermore one must avoid the possible retention of ammonia, which was not impossible with Pauly. In order to overcome Abel's objections Pauly prepared an Adrenalin entirely free from organic as well as inorganic phosphorus, and found that the nitrogen content remained the same as in his four or five previous analyses. Experiments were also carried out which showed that the Adrenalin employed for the analyses was entirely free from adherent ammonia, while the contention of Abel that Adrenalin obtained by precipitation with dilute ammonia contains adherent ammonia that is difficult to wash out is also shown to be erroneous. It is also shown conclusively by drying Adrenalin at different temperatures that it contains no water of crystallization according to the formula $C_{10}H_{13}NO_3 \frac{1}{2}H_2O$ (Abel). That Adrenalin contains no water of crystallization was shown also by Abel's own experimental work when he heated the same to 145-160 degrees *in vacuo* without

ANTIPHLOGISTINE

Has been so long and intelligently known that it is not necessary to discuss in detail its scientific action and therapeutic value.

When considering its usefulness however, we desire to have the physician bear in mind that which he has always been taught—that the essential conditions in all inflammatory processes, whether deep-seated or superficial structures, are practically identical. Then he can appreciate the fact that Antiphlogistine's field is almost limitless. It must ever be borne in mind too, that there is more or less of a retardation of the circulation in the affected part which may reach the point of stasis, in which event the cells starve to death and decompose; in other words the process terminates in suppuration. Antiphlogistine's prime object is to keep the blood circulating in an inflamed part. In pneumonia and other affections involving deep-seated organs Antiphlogistine, by stimulating the cutaneous reflexes, causes a contraction of the deep-seated and simultaneously a dilation of the superficial blood vessels, and this, combined with its hygroscopic properties acting directly, draws the blood to the surface—bleeds but saves the blood.

The potent hygroscopic property of Antiphlogistine, upon which so much depends, should always be carefully preserved by not needlessly exposing it to the moisture of the atmosphere or to water. It should always be heated IN THE CAN, spread upon the skin quickly and covered promptly with a liberal supply of absorbent cotton.

The fact that Antiphlogistine is in the twelfth year of its existence and in daily use throughout the civilized world speaks volumes in its praise. We trust the above may prove interesting to those familiar with Antiphlogistine and may cause some of the tardy ones to investigate the claims in the only satisfactory way—by experimenting and verifying.

SUGGESTIONS :

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appreciable loss; but nevertheless this observation, evident as it is, did not suggest to him the only possible conclusion that Adrenalin contains *no water* of crystallization. (The formula $C_{10}H_{13}NO_2 \cdot \frac{2}{3}H_2O$ requires 4.41% H_2O).

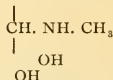
What has been stated in this article together with the excellent agreement of Pauly's former analytical results suffice to show his earlier statements require in no wise a correction, and that the formula $C_{10}H_{13}NO_3 \cdot \frac{2}{3}H_2O$ proposed by Abel is incorrect. This formula, together with the name "Epinephrin Hydrate" which designates the same, should be blotted out of the literature. The name "Epinephrin," however, should remain now as before for the basic substance obtained by treating Adrenalin with concentrated H_2SO_4 , or with dilute acids under pressure, and to this formula $C_{10}H_{13}NO_3$ should be given. This body, whose chemical composition is different from that of Adrenalin, and whose physical, chemical, and pharmacological properties are different from the real blood-pressure-raising substance, should be considered a transformation product of the active principle.

With respect to names Abel does not distinguish sharply between the designations "Epinephrin" and "Epinephrin Hydrate," although he has stated previously (Berichte, Vol. 36, p. 1846) that a body is produced from "Epinephrin Hydrate" (equivalent to Adrenalin) with alkaloidal properties (which Adrenalin does not show!), "Epinephrin." He uses in the title of his articles, however, the name "Epinephrin" exclusively. This must awake the conviction in the mind of the unsophisticated reader that the active substance of the suprarenal bears the name "Epinephrin," while it is really the name of the transformation product.

The consequence of this indefinite manner of designation has, in the meantime, influenced Jowett (Proceedings Chem. Soc., 10, 18) to write: "Epinephrin was the name given by Abel and Crawford to the active principle of the suprarenal gland." This was of course true, until the time Abel gave this name "Epinephrin" especially to the transformation product. Jowett says later: "As Abel and Crawford were the first to isolate the active principle, although in an impure condition,—" In the interest of recorded truth Pauly objects to this. Abel has, it is true, from crude extracts of Adrenalin, thrown out, by benzoylating, an impure benzoyl product which still contained, no doubt, the original molecule; although he could not obtain from the same, by decomposition, any Adrenalin, but obtained, instead of the same, quite another

thing than the original solution of the active principle. v. Furth was more fortunate. He precipitated the active substance in the form of an iron compound, from which he could liberate crystalline Anrenalin after Takamine (in 1901) had given the method for the direct precipitation of the substance with ammonia. Thus there can be no doubt that not Abel and Crawford, but Takamine first obtained the active substance. If Abel adheres to the statement referred to in the beginning, that his formula $C_{10}H_{13}NO_3 \cdot \frac{2}{3}H_2O$ finds confirmation in the analyses of salts and derivatives, it must be answered that that is not the case, that he, outside of one impure benzoyl product, has not prepared, not to say analyzed, up to the present time, either a salt or derivative of Adrenalin, in which the nucleus of the last is still intact. Without doubt he means the transformation products of epinephrin described by him; but according to the experiments carried out above, the same are not conclusive.

Two derivatives of Adrenalin—Adrenalin urate, $C_9H_{13}NO_3 \cdot C_5H_7N_3O_3$, and dibenzoyl Adrenalin, $C_9H_{11}NO_3 \cdot (C_6H_5CO)_2$ —were prepared and analyzed, both of which appear to confirm the formula $C_9H_{13}NO_3$. The difficulty of obtaining either derivative in a crystalline form accounts no doubt for the slight deviation from the theoretical values. It is also not improbable that the benzoyl compound may be a mixture of mono- and tri-benzoyl Adrenalin. The structural formula CH_2 . OH



is given as the most probable formula for Adrenalin, although further support for the same is desirable.—(From the Laboratory of the University of Bonn). Berichte, March 31, 1904, Vol. 37, p. 1388.

Sanmetto in Catarrh of the Genito-Urinary Organs in the Female.

Recently I had occasion to try Sanmetto in catarrh of the genito-urinary organs in the female. The patient was a young married woman, thirty years of age, the mother of five children. She complained of scant but frequent urination. I made an examination and found irritable bladder with acid urine and offensive sedimentary deposit. I gave a prescription of copaiba, potash, lavender and lithiated hydrangea, which did some good, but did not give me satisfaction. When Sanmetto occurred to me I added a whole bottle of it to my prescription; then my patient began to make rapid improvement, and within a week was

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well. Her husband told me afterward that the medicine had infused new life into her, and that her erotic powers had greatly increased, and that for which she always formerly had an aversion was now made a pleasure to her. I think there is no better medicine made where the same is indicated.

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George Ben. Johnston, M. D., LL. D., President of the American Surgical Association.

A comfortable living, the love of a few grateful patients, the knowledge that by his help sufferers have been relieved and the angel-death once or twice turned back, are usually the only rewards of the conscientious doctor of medicine.

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That Dr. George Ben. Johnston is both an authority on surgery as well as the recipient of the most distinguished honor in the gift of his brother surgeons, means that he possesses indomitable energy; that he has

been wedded to his profession, but most of all that with him was born that hand to define, impossible to understand—attribute—genius.

Whether we think of his personality from the standpoint of his friends, to whom he has been kind, whose sufferings he has relieved, whose troubles he has cheerfully helped to bear, to whom he has given advice, or from the viewpoint of an antagonist (for all original thinkers necessarily create such), to whom he proves to be a formidable opponent, affable, courtly, flexible, we are like impelled to recognize his generosity, loyalty, fearless truthfulness.

Just as he is large of body, so is he ready of impulse, big in his generosity, broad in his ideas, many sided in his way of looking at questions, powerful in council.

The petty jealousies so usual among doctors seem to find no lodging place in his magnanimous mind.

No physician could be more generous towards the young doctor just beginning in his profession. Not one or two, but tens of doctors owe their successful start in this unselfish man.

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elected him to fill the presidential chair of the American Surgical Association, which counts among its members the foremost surgeons of America.

In electing Dr. Johnston as president, the American Surgical Association honored itself, the State of Virginia, its child the Medical College of Virginia, and the entire South.—Richmond Journal of Practice.

Glycogen, a Therapeutic Aid.

In the *Presse Medicale* of the 22nd of April, 1903, a year after my first communication to the *Societe de Biologie*, I referred to the therapeutic effects resulting from the administration of Glycogen.

Since then glycogen has attracted much attention in France and abroad. The results are often surprising in those cachexias and acute affections where the organism reacts badly.

Now that glycogen is beginning to be adopted in general practice, it appears to me interesting to give more precise indications for its useful employment.

The clinical applications of this agent suggested themselves by the trend of modern medical thought and the physiologic indications acquired by research alone in recent years. According to the investigations of de Luschy, de Brault, de Loeper, Esmonet, de Teissier, de Charrin and others which accord with my own, glycogen accumulates at points where either a reaction takes place, or where there is cellular proliferation; it is diminished or eliminated from the blood of patients suffering from tubercular, typhoid, diphtheritic, and general cachexia; besides which, it is antitoxic and bactericidal.

The theoretical grounds on which glycogen produces results, however, required the support of actual clinical evidence before it could be seriously accepted by the medical profession generally, and this has been most abundantly forthcoming.

From the standpoint of scientific deduction, it is perhaps fortunate that it has also been used as an empirical remedy, for who would have supposed it possible that glycogen could produce such marvelous effects in migraine? The general indications in which its effects are demonstrated and supported on purely technical grounds are well established, in cachectic conditions, such as occur in tuberculosis, cancer, neurasthenia, diabetes, albuminuria, chlorosis, etc.

The vitality of patients improves rapidly, and those who have been in bed for months are usually able to get up after ten or twenty days' treatment. The morale improves, the appetite increases, and some tubercular patients gain as much as two pounds weekly under its influence.

In typical infectious diseases, such as

typhoid, grippe, scarlatina, pneumonia, erysipelas, etc., the course of the disease is simplified, temperature is easily reduced, and convalescence is much easier, and more rapid.

These effects are observed in the most serious cases, such as we find in tubercular peritonitis. I recall a case of this nature, now completely cured, which was treated in the surgical department of the Lariboisiere Hospital with glycogen, the patient regaining strength and appetite in a most remarkable manner after a few days' treatment.

In the aged, glycogen may be looked upon as a universal remedy in all affections; it is of especial advantage with this class of patients, whose organs have become fragile, because there is absolutely no danger of doing harm. In one case of pneumonia in an old man, the patient recovered with the ease that one expects only amongst the young, and in two asthma cardiac cases, aged respectively 72 and 76 years, one was able to go out after being confined to his room for months, after a few days' administration of glycogen, and the other lost the trembling which had hitherto prevented his drinking from a spoon. The method of administering glycogen is of great importance, and if failures to confirm my claims have occurred amongst my confreres I can only attribute it to faulty methods of administering the glycogen.

First:—Glycogen acts better taken by the mouth than when injected hypodermically, but the hypodermic injections are necessary in pyrexia, or where there is danger of collapse and heart depression.

Second:—As the ferments of the saliva and of the intestines change the glycogen into an inactive maltose, and those of the stomach do not materially affect it, it is necessary to give glycogen in a form which will dissolve rapidly in the stomach, but without coming in contact with the buccal secretions. Hence capsules which open rapidly in the presence of aqueous fluids are most convenient.

Third:—Glycogen should be administered well between the meals, and it is perhaps better to give it say one hour before the mid-day meal.

From eight to twelve centigrammes give the best results in chronic diseases, and from twelve to twenty centigrammes in acute affections.

Briefly, glycogen medication is indicated in all cachectic conditions, as well as in infectious diseases, of which it simplifies the evolution and convalescence. Glycogen has no contra-indications, and is not in any way toxic. It has certain marked accessory qualities, namely, tonic action of the heart,



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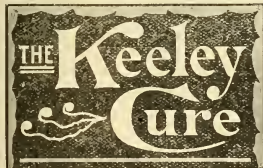
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besides being distinctly bactericidal and anti-toxic. It is therefore indicated in the treatment of all auto-intoxications, such as migraine, and wherever there are wounds and ulcers which do not heal. Glycogen, in fact, while having no specific action in itself, is a therapeutic aid, stimulating the natural resistance of the organism against the invasion of pathogenic organisms, and is therefore fully worthy of the considera-

tion of modern physicians.—Jacques de Nittus. (Translated from the Tribune Medicale, April 2, 1904).

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Trade Supplied by the Leading Wholesale Druggists.

Morvan's Disease (*London Hospital Gazette*, July, 1903).—In a clinical supplement to the *London Hospital Gazette* an unusually well-marked case of this somewhat uncommon condition is described. A child, aged four years, was admitted to the hospital with a large whitlow of the left thumb and the following history: Since the age of eight months first one and then another of her fingers suppurated and then healed. No pain was ever complained of. She did not walk until the age of three years, her mode of progression being by sitting on her buttocks and screwing herself along. During this period she had repeated painless sores on the external malleoli. Both on the arms below the elbow and the legs below the knee are large badly-defined areas over which the senses of heat, cold, and pain are, to a large extent, lost. The child's gait was markedly ataxic, and the knee-jerks were absent.

The disease is dependent upon changes in the cord, and is usually grouped with syringomyelia. It comes more within the domain of the physician, but surgeons should be on the outlook for such an explanation of suppurating sores in children, who are likely to be brought to them in the first instance.—*Indian Medical Record*.

Peritonitis Following Attempted Abortion

Varnier reports the case of a woman who confessed that she had tried to commit an abortion upon herself. She had made use of a rubber sound armed with an iron wire. The woman made three different attempts to introduce the sound into the cavity of the uterus. Laparotomy showed the existence of an area in the upper, anterior surface of the uterus, which was surrounded by a liquid suggestive of septic peritonitis. Hysterectomy was performed. The placenta was discovered to have remained in a posterior cavity, which communicated with the rest of the uterus only by a filiform canal. The writer thinks that this woman was able with ease to introduce the sound into her uterine cavity, from what he has learned in this respect from experimental researches.—*La Presse Medicale*.

Opium Neurosis.

I am very much pleased with Sanmetto. It is a valuable preparation and should be in the hands of every specialist who treats the opium neurosis. In such conditions there is always considerable urethral inflammation besides other diseases of the genito-urinary organs; but opium users are obliged to take twice the quantity of Sanmetto usually prescribed, to produce good results.

F. H. GRIFFIN, M. D.,
Germantown, Phila., Pa.

The Pan-American Congress will hold its next meeting in Panama the latter part of December. The Pan-American Congress meets every three years. It was started by Dr. William Pepper, of Philadelphia; Dr. C. A. L. Reed, of Cincinnati; Dr. Albert Van der Veer, of Albany, and Dr. H. L. E. Johnson, of Washington. The first meeting was held in Washington in September, 1893; the second in Mexico in 1896; the third was to have been held in Venezuela in 1899, but was given up on account of the war in that country. The place of meeting was changed to Cuba, but had to be postponed until 1901 on account of the fever there. Further particulars will be sent out from time to time by Ramon Guiteras, M. D., Secretary of the International Executive Committee, 75 West 55th Street, New York City.

Dr. J. L. Waffenschmidt, of Cincinnati, Ohio, who graduated from Miami Med. Col. in 1872, writing, says: "My experience with Sanmetto has been pre-eminently satisfactory in all cases of irritable conditions of the urinary organs, and I prescribe it with a feeling of certainty of good results in catarrhal conditions of the pelvic organs and atonic conditions of the sexual glands. In cystitis, spermatorrhea, emesis and loss of sexual power it is par excellence."

Certain Biological Differences Between the Macro and Microphages.

Sawtchenko demonstrates, by a number of examples, that macrophages contain in their protoplasm a cystase which possesses the property, under certain conditions (notably in the presence of a specific fixative), of easily digesting microbes. He explains the difference in the sensitiveness of micro and macrophages toward various microbes, by the different composition of the fixative in the protoplasm of the various forms of leucocytes.—*Russki Arkhiv Patologii*.

Tuberculosis.

According to Dr. D. Levay, ichthyol favorably influences the tubercular process in phthisis. "With the improvement in the appetite the strength of the patient and his power of resistance increase, and as a result the symptoms of the tubercular process diminish. Its action combines the advantages of iron and cod liver oil, and to this is added antiseptic action." Of course, the hygienic and dietetic measures are not to be neglected. In the author's cases, the ichthyol was preferably taken in pills.—*Deut. Med. Ztg.*

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No. 4

The Importance of Surgical Tuberculosis to the General Practitioner. *

By Hermann B. Gessner, M. D., New Orleans, Louisiana. Chief of Clinic to Chair of Surgery; Demonstrator of Operative Surgery the Tulane University of Louisiana.

Having been honored by the Society with the Chairmanship of the Section on General Surgery, it devolves upon me to introduce the subject chosen for discussion viz: "The Importance of Surgical Tuberculosis to the General Practitioner." In proceeding to do this it is my purpose literally to introduce the subject, not to attempt a complete discussion of it from all points of view.

Naturally, the importance of any pathological state or disease must depend upon its prevalence and its mortality. The first questions we put ourselves on encountering a new disease are "how often is it encountered" and "how many of those affected die." In order to properly establish the relative importance of the disease under consideration I must perforce resort to statistics. This, however, I shall do as briefly as I can without sacrifice of essential points. The figures which I shall give you are from local sources; in fact, exclusively from our Charity Hospital of New Orleans, the practice in which probably reflects accurately that of the general practitioner in Louisiana.

Before taking up the prevalence and mortality of the purely surgical tuberculosis, let us glance for a moment at the most prevalent form of tuberculosis—that of the lungs.

In Dr. R. Matas' Monograph, "The Surgical Peculiarities of the American Negro," published in the Transactions of the Am. Surg. Ass'n., 1896, Vol. XIV, is to be found a series of tables of figures bearing on this subject, giving the prevalence and mortality of the various forms of tuberculosis in the New Orleans Charity Hospital for the years 1894-1893, inclusive.

I have prepared a series of tables, similar to those of Dr. Matas, for the years 1894-1903, inclusive, the figures of which for pulmonary tuberculosis, including incipient phthisis, phthisis florida, caseous phthisis, phthisis pulmonalis, chronic pneumonia, caseous pneumonia, incipient, acute, general and miliary tuberculosis, are here given.

Whites 2154 cases, 835 deaths; colored 3040 cases, 1346 deaths.

*Read before the 25th Annual Meeting of the Louisiana State Medical Society, New Orleans, May 10-15, 1904

Mortality of the disease, whites 39 6%; colored 44.2%.

Decennial prevalence, whites 4.24% (42 in 1000); colored 9.001% (90 in 1000).

Decennial mortality, whites 1.68% (17 in 1000); colored 3.98% (40 in 1000).

The greater actual mortality, decennial prevalence and decennial mortality among the colored people is noteworthy.

Passing by the medical aspect of the tuberculosis question, we take up the diseases classed as belonging under the head of "Surgical Tuberculosis."

Here we take up tuberculous peritonitis, meningitis, laryngitis, adenitis, scrofulous and strumous glands, tuberculous or cold abscess, lupus and cutaneous tuberculosis, tuberculous ulcer and Pott's disease. The figures show among the whites 277 cases, 24 deaths; colored 350 cases, 22 deaths, giving for the whites actual mortality 8.66%; decennial prevalence 0.54% (54 in 10,000); decennial mortality 0.047% (47 in 100,000).

Colored, actual mortality 9.4%; decennial prevalence 1.03% (103 in 10,000), decennial mortality 0.097% (97 in 100,000).

While the number of patients affected with this variety of tuberculosis is much smaller than that on which the pulmonary form has become fastened, yet the proportion is by no means insignificant or negligible, as witness the fact that 54 in 10,000 white patients suffered with such affections, and 103 in 10,000 colored.

It will be noticed that among the conditions classified under surgical tuberculosis no diseases of the bones, joints or bursae are mentioned, these diseases being enumerated in the Charity Hospital reports under the names caries, necrosis, periostitis, synovitis, arthritis, bursitis, without reference to the nature of the specific infection. Accepting the proposition of Dr. R. Matas (op. cit.) that the vast majority of the cases (in both races) are of tuberculous origin, we shall proceed to analyze the figures on the plan followed before in this paper.

During the decennium 1894-1903, there were enumerated under the head of diseases of the bones, joints and bursae for the whites 1211 cases, 38 deaths; colored 743 cases, 30 deaths, giving for the whites actual mortality 3.13%, decennial prevalence 2.38% (24 per 1000), decennial mortality 0.074% (7 in 10,000). Colored, actual mortality 4.03%, decennial prevalence 2.199% (22 per 1,000), decennial mortality 0.088% (9 in 10,000).

In order to get a full idea of the decen-

nial prevalence and mortality of all possible tuberculous conditions of a surgical character, we shall add the percentages for the two groups of surgical tuberculosis (assuming the diseases of the bones, joints and bursae to be largely tuberculous). This addition give us for the

Whites, decennial prevalence 29.92% (21 per 1000); decennial mortality 0.121% (12 in 10,000).

Colored, decennial prevalence 3.23% (32 per 1000); decennial mortality 0.185% (18 in 10,000).

N. B.—In compiling these statistics those remaining in the wards at the end of each year were eliminated, only those cases which were discharged or died being considered.

I believe the figures given will suffice to impress upon all who have followed them the importance of tuberculosis in general and of surgical tuberculosis in particular to the general practitioner. I shall conclude this presentation of evidence by stating that in Ward 1 of the Charity Hospital, a portion of Dr. R. Matas' service as Professor of Surgery in the Tulane University of Louisiana, there were among 149 surgical cases admitted during the session of 1903-1904 17 cases of tuberculous nature, or 11.4-10%.

before you, though such reading is, I know, rather dry and apt to become tedious, I wish to devote the short remainder of this paper to dwelling on some points that have struck me as being important.

The etiology and pathology of the diseases under consideration I shall pass by because they have been so thoroughly studied by others that they need no special consideration at this time and place.

It is upon the prompt recognition and radical treatment of tuberculous surgical conditions that I wish to lay special stress.

While the widespread character of the surgical lesions of tuberculosis is becoming better and better understood, it is not every practitioner who realizes, e. g., that inguinal adenitis is frequently tuberculous, attaching no moral stigma to the patient affected by it and not to be treated by merely poulticing until suppuration shall call for the bistoury.

In surgical teaching stress should be laid on the frequency with which surgical lesions of a tuberculous character are met with involving bones, joints, bursae, meninges, glands, fasciæ, larynx, pleuræ, mammæ, peritoneum, kidneys, bladder, testes, anus. It is a source of proud pleasure to be able to tell you that nowhere is this done with greater force, persistence and ability than in the clinical lectures of the Professor of Surgery of the Med. Dept. of the Tulane University of Louisiana, the institution in which this meeting is being held.

An encouraging factor in the handling of these surgical tubercloses is the fact that a patient may have a marked tuberculous affection of a surgically accessible organ and yet have the surgically inaccessible, or rather, not easily accessible, lungs absolutely free from disease. I retain a vivid impression of a necropsy seen some years since, which showed the neck riddled with sinuses leading to tuberculous glands, while the lungs had escaped absolutely unscathed.

Let us, then, be on the lookout for the accessible ravages of Koch's bacillus, spurred on by the strong hope of remedying them before wide dissemination or the involvement of the lungs has made our task one of too great difficulty.

Let no lesion of slow, painless, afebrile character escape minute investigation from the point of view of the great white plague. The exploring syringe will often with comparative ease and slight danger clear up any doubt that may linger after the application of other diagnostic means.

Now a few remarks about treatment.

Rest, the use of splints, the orthopedic treatment in general of tuberculous cases have proven beyond doubt their value in suitable cases. It is for greater aggressive-

Comparative Table.

Actual Mortality
Decennial Prevalence
Decennial Mortality
(Charity Hospital, New Orleans, La.)

		Pulmonary Tuberculosis		Surgical Tuberculosis		Bones, Joints, and Bursae	
		W per et.,	C per et.,	W per et.,	C per et.,	W per et.,	C per et.,
Actual	{ 1884-1893	41.04	58.39	20.18	22.68	2.34	7.99
Mortality	{ 1894-1903	39.6	8.66	9.4	3.13	4.03	
Decennial	{ 1884-1893	4.78	8.33	0.241	0.504	1.42	1.63
Prevalence	{ 1894-1903	4.24	9.001	0.54	1.03	2.38	2.199
Decennial	{ 1884-1903	1.96	4.87	0.049	0.114	0.033	0.130
Mortality	{ 1894-1903	1.68	3.98	0.047	0.097	0.074	0.088

Leaving now the statistical aspect of the question, which it has been my duty to put

ness in proper instances that I wish to make a plea.

I have so often seen time lost in aspiration and iodoform injection where radical measures might have done much good that I have grown to look on that method with disfavor except as a palliative in cases suited for no other procedure. During the past year I have been struck by the excellent results obtained by radical measures in three cases which I shall cite in outline.

Case I.—Extensive fascial tuberculosis of thigh; iodoform injection after aspiration; reaccumulation of pus; radical excision of sac surrounding abscess cavity; prompt, complete recovery.

Case II.—Cold abscess over left eyebrow, found to involve frontal bone, which was perforated, and extend to dura. Removal of diseased bone, shaving off of tuberculous patch from dura, application of cautery; negative exploration of suspicious soft area in brain. Complete recovery. Subsequent attacks on fascial tuberculosis at wrist, and on tuberculous cervical glands existing at time of first operation. Recovery.

Case III.—Tuberculous spondylitis, lower lumbar. Abscess evacuated on right side. Deep seated pain on left. Search for abscess, which caused pain by pressure on nerve root. Evacuation. Use of aqueous extract of tubercle bacilli, prepared by Von Ruck of Asheville. Great improvement; patient has gone back to work.

Let it be well understood that the radical measures advocated—for suitable cases only—must be carried out under aseptic conditions. I do not mean by this that members living away from cities must send their cases away for treatment. Boiling water for instruments and ligatures, the portable steam sterilizer for the woven fabrics and rubber gloves, soap and water and brushes for the skin, make the well-educated doctor of the village the equal of the surgical magnate of the metropolis in aseptic possibility, though not in aseptic convenience. Careless and half-way dealings with tuberculous conditions throw open the door to the bacterial wolves ever seeking whom they may devour.

Let me continue by urging the use in these cases of some specific medication. Here in New Orleans the aqueous extract of tubercle bacilli has been used with excellent results. This and other remedies of the kind, such as Fisch's antituberculous serum, should be thoroughly tested to determine their true merits.

By the will of Cornelia Thompson the sum of \$10,000 has been devised to the Presbyterian Hospital of Philadelphia, for the endowment of two free beds, and the sum of \$5,000 to the Children's Hospital.

A Plea for a More Just Judgment of Narcotic Drug Users. *

By Geo. E. Pettey, M. D., Memphis, Tenn.

When I began the preparation of this paper I intended its title to be "A Plea for a More Charitable Judgement of Narcotic Drug Users," but on getting into the subject more fully, I saw that it is not charity that I should ask, but simple justice. Therefore, I come before you to-day making a plea for justice and not charity. I hope to show you that thousands of the most wretched and helpless of all human beings are being constantly and openly stigmatized as degenerates, willful perverts, inveterate liars and fiends, and are having numerous other epithets of reproach and condemnation heaped upon them for continuing a course of conduct to which they are impelled by forces that it is totally beyond their power to resist. Whether an opium addiction was formed from necessity or as a dissipation, justifiably or unjustifiably, the condition finally becomes the same and when the condition of confirmed addiction is reached it is as truly a disease as typhoid fever, and the normal supply of the drug used is a necessity for the comfort and well-being of the victim.

Let us consider for a few minutes the condition into which an opium user is thrown by being deprived of his drug. Dr. Wilson, Vol. V., *Pepper's System of Medicine*, says: "Opium habitues, differing as they do among themselves as long as the drug is freely taken, all alike develop characteristic symptoms upon its speedy or gradual withdrawal * * * The nervous system, whether it has been accustomed for months only, or for years, to the influence of opiates is, upon their withdrawal, forthwith thrown into derangements of the most serious and wide-spread kind. In the course of a few hours after the last dose, the steady influence of the drug disappears. General malaise is associated with progressive restlessness, the ability to perform the ordinary duties of life gives way to profound indifference; precordial distress, accompanied by cough, is followed by insomnia, hallucinations and sometimes mania. The habitual pallor of the face is replaced by a deep flush or cyanosis. The heart's action becomes excited or irregular, then feeble; the pulse, at first tense, becomes slow, thready and irregular. Attacks of yawning and sneezing are followed by convulsive twitching of the hands. Speech becomes hesitating, drawing and stuttering. These phenomena are associated with a sense of

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

complete prostration which obliges the patient to take his bed. Pains in the back and limbs followed by neuralgias occur. Complete anorexia, with easily provoked or even causeless vomiting and persistent nausea with diarrhea, difficult to control, add to the gravity of the condition. * * * During the early days of the abstinence, the evidences of cardiac failure are marked. Enfeeblement of the first sound, irregularity of the heart's action and intermissions are common * * * Restlessness is continuous and very often intense and patients are with difficulty kept in bed. If left to themselves, they move frantically about the room, moaning and bewailing their condition and begging the attendant for that which alone is capable of relieving their distress. This condition gradually subsides, giving way to one of profound exhaustion. * * * The appearance of the patient is now most pitiable. The countenance is blanched and pinched, the body drenched with sweat, the heart action feeble, the pulse thready and irregular. * * * Failure of the circulation may, notwithstanding every effort to control it, reach such a degree as to jeopardize the patient's life."

Erlenmeyer says: "The patient after withdrawal is left in such a condition of physical weakness and mental dilapidation as to be the victim of intolerable suffering. * * * He can not sleep, has no appetite, often vomits and feels too much used up to rise from bed. This condition grows worse from week to week. Various attempts to cure prove useless. Morphine is the only remedy." Butler's Therapeutics, p. 452, says: "The treatment of so dire a malady for such the chronic use of morphine must be regarded, demands the utmost forethought, patience and tact. The method of sudden, absolute withdrawal of the drug is admitted by the wisest observers to be fraught with dangers commensurate with that of the indulgence to be overcome. Collapse, insanity and other serious results have attended so drastic a measure. The gravity of the situation should from the first be fully realized, since it is too often simply a case of life or death, the patient being not infrequently seized with the desire of self-destruction in the extremes of mental anguish occasioned by the ordeal imposed by unwonted abstinence."

Other writers of undisputed authority enumerate intolerable suffering, violent delirium, transient or permanent dementia, suicide and death as occurring to drug users because of being deprived of their drug supply. Notwithstanding these clear and distinct teachings by men of unquestioned authority, the great majority of professional

men regard the users of narcotic drugs as being willfully abandoned to a loathsome habit which they could discontinue if they would. As a result of their holding such views, the public have been taught to regard these victims as perverts who are devoid of moral courage and right purposes in life and who take their drug simply to dream away the time and, who are unworthy of any treatment other than social ostracism. The fact that such opinions are generally held among the people is a matter of common knowledge, and when one falls a victim to a drug, however strongly he may have condemned others for what he considered a voluntary, loathsome habit, he soon finds there is another side to the question. Comparatively few persons form the opium habit voluntarily or as a dissipation. Usually it is formed inadvertently or because of the use of the drug for the relief of pain. There are very few drug users who have not made many and often very desperate efforts to extricate themselves from the thralldom of the drug or who have not, by some circumstance or other, been deprived of their drug supply. These efforts at abandonment or periods of deprivation have brought upon them the sufferings incident to the disuse of the drug and these have proven to be so excruciating and intolerable as to thoroughly convince them that the voluntary abandonment of the drug is entirely out of their power; that what they once blamed others for not doing, they are themselves unable to do.

While such experiences may have worked a radical change in their own opinions they are well aware that public opinion—the irresistible moral force—has not undergone any such change. They are acutely or possibly morbidly sensitive to the fact, but they are not changed in their purposes in life, in their desire to have and retain the respect and confidence of their friends and the public in general. They still love their life and their good name is as dear to them as ever. They feel confident of their own integrity and good purposes but they know that the drug is a necessity to them. They also know that if their use of the drug should become known the blighting sting of public opinion would lacerate their very souls, therefore, in order to shield themselves from criticism and censure, springing from what they now know to be misguided public opinion, they procure their drug and use it in secret. Thus they start out leading a double life, a life of deception, with a skeleton in the closet that must be kept constantly concealed from public gaze, but the motives which prompt them to that course are not dishonorable. Self-preservation is said to be the first law of nature. A

man is justified under the law in taking the life of his fellow-man when necessary to preserve his own and, in the protection of his good name, which to a right thinking man is as dear as his life, very great liberty of action is allowed.

The acts that are held to be a perversion of character which are manifested by many of these persons are not due to the physiological effects of opium or to any pathological conditions induced by it. The use of this drug does not, of itself, beget moral degeneracy. This springs largely, if not altogether, from another source. This is clearly shown from the fact that drug users who are independent of such influences maintain their integrity, sustain their good name and retain the respect and confidence of their associates. To illustrate this point, I will relate the history of three cases.

The first is a druggist who has used morphine 18 years, running up in quantity during that time to twenty grains per day. He has during all that time continued to attend to his business, has been successful as a business man, has built up and held a large trade, and has himself done much of the prescription work and other delicate work connected with the business. His family and his physician knew of his addiction but never at any time reproached him for it or tried to control him with reference to it. The public had no occasion to know of it or to be concerned about it, therefore, asked no questions. Being a druggist and independent financially, his drug supply was always at hand and was taken at regular intervals and in uniform quantities. In this way he kept himself in a fairly normal condition and neither the public nor the people with whom he did business suspected his use of the drug. A uniform supply of the drug was as necessary to keep this man in a normal and comfortable condition as it would have been for any other drug user, but, being in a position to have entire control of the drug supply, he was not compelled to resort to questionable means of obtaining it and, as his family made no objection to his course and did not any time attempt to stand between him and his drug supply, he was not forced to use deception or other questionable means to obtain the necessary thing. Being thus favorably situated, he was able to retain the confidence of his family and friends, and of the public at large.

The second, a similar case, was a physician who became addicted to the use of morphine during a protracted attack of inflammatory rheumatism and, after about six months use of the drug for the relief of that ailment, the rheumatic symptoms subsided and an effort was made to discontinue the

drug, but without success. After a little delay, another and another effort was made with the same result. The suffering resulting from these efforts, with the necessary resort to the drug for relief in each instance, fully convinced the doctor and his family that it was out of his power to discontinue it and they all accepted the situation and looked upon his addiction as a misfortune for which he was in no way to blame, and from that time on for more than twenty years he continued the use of the drug with the full knowledge and consent of his family, but without his patrons or the public knowing anything whatever of it. He kept an ample supply of his drug always on hand and used it in uniform quantities and at regular intervals, and during all these years he kept up an active practice, and held the confidence of his patrons and of the business public. He was always an unwilling slave, and no element of dissipation was allowed to enter into his addiction. He bought the drug in tablet form so as to be exact about the dose and only took a sufficient quantity to keep him comfortable. In this way he succeeded in holding the dose down to six grains or less per day. On days when he had little to do, he used not more than four grains, but on other days when there were taxing duties to meet and when his hours of work were prolonged into the night, as much as six grains were required to sustain him. From his appearance or conduct, no one would ever suspect his being a drug user and he was, when he came for treatment, in an active practice and holding a number of official positions in the profession. He was a man of intelligence and of fine family and character, and very acutely felt his slavery. He says he realized that the drug was injuring him, especially his memory, therefore, he wanted to be released from its thralldom.

The third, another of this type, was a refined, delicate woman, who had been given morphine for several months to prevent an abortion, and after her confinement she was unable to discontinue it. She made repeated efforts, with the assistance of her husband, to leave off the drug, but her condition in each instance became so critical that her husband would not consent for her to make further effort in that direction and, instead of chiding her or blaming her for her inability to leave off the drug, he bought it for her in sufficient quantities and told her to use it as she found it necessary. She suffered from a number of ailments which led to an increase of the dose to about 20 grains per day; but, for several years no one knew of the use of the drug except her husband and her physician. Later her father and brothers were in-

formed of it and, as they had heard of my work in this line, they urged her to come for treatment. When she was brought to me her husband and brother gave me a history of the case, her husband stating that he recognized it as a misfortune for which his wife was in no wise to be blamed and, since he realized that it was out of her power to quit it, he had kept her supplied with the drug so that she had never been forced to obtain it any other way or to resort to deception in connection with the habit. He said that she had always been perfectly open and frank with him about the matter and that the use of the drug had not in the least rendered her unreliable or untrustworthy. She was with me about six weeks and I found her entirely truthful and trustworthy, never at any time attempting to deceive me or indulging in extravagant or unfounded statements. In fact, she showed the same high sense of honor and exercised the same caution in statement and respect for her word that would be expected in a woman of refinement and culture afflicted with any other disease, notwithstanding the fact that she had been using morphine, in considerable quantities, for more than five years.

These are fairly representative of a large percent of drug users who come under the care of one engaged in the treatment of such cases. It is true that this class of drug users are almost unknown to the public and are very little known to physicians in general practice, but they are not at all rare among those who apply for treatment to institutions devoted to the treatment of such cases. The mere use of opiates does not make perverts or moral degenerates of people who were of good character before the use of the drug was begun and, the fact that some such persons do retain their integrity and sustain their character and standing, notwithstanding the use of this drug, forces us to look elsewhere than to the effect of the drug for an explanation of the traits of character usually seen in drug users. Let us, therefore, study the history of a few other cases.

Case four is of a different type, but at the beginning her character and standing were first-class, she was a member of a good family and married to a lawyer of prominence. She made an ideal wife, loved her home and devoted herself largely to making it attractive to her husband. Something over a year after her marriage, she became the mother of a fine boy which was the delight of both father and mother, and for the next two years their home was an ideal one. About this time another conception occurred. All went well until about the fourth month, when she was

threatened with a miscarriage. The family physician was called and it became necessary to confine her to bed and administer morphine for about ten days to prevent an abortion. She was then allowed to get up but a few days later the symptoms returned. She was again put to bed and morphine was administered, and this time continued for three weeks without the intermission of more than a full day. Morphine was then discontinued and she was allowed to get up, but in a few days the uterus became rebellious again and it was necessary to resume the use of the opiate. By continuing the opiate from that time on, she was carried on to her full term and delivered of a healthy child. She had both a perineal and a cervical injury at the confinement, which protracted her convalescence and caused considerable suffering, and the morphine was continued until the baby was two months old. By this time, she had sufficiently regained her strength to be up and about the house. Her physician then told her that it would not be necessary to longer use the opiate, discontinued it and dismissed the case. In about 24 hours her suffering became so acute that he was again called, but declined to give an opiate, insisted that her suffering was mainly imaginary and told her husband that as soon as she found she could not get more morphine she would become quiet and quit complaining. Her husband believed this and told her that he would not allow her to have more of the drug under any circumstance and, leaving her with her servants, went on to his business. As the addiction had been confirmed by more than six month's use of the drug, her sufferings increased until they became unbearable and, realizing that she could not except relief from either husband or physician, she sent a servant out and obtained a bottle of laudanum. A full dose of this gave her a fair degree of relief, and when her husband came home in the evening she was more quiet and he felt that the doctor's word had come true and that they had, by their firmness, broken his wife from the use of morphine. But he was mistaken. When the first bottle of laudanum was exhausted, more was obtained. This was used as sparingly as possible and she made numerous efforts to leave it off altogether. Finding herself unable to do so, she continued it and by discreet management used it for a period of two years before it was detected by her husband. When he did become aware of it, he reproached her for it very severely, and again applied to his physician for advice in the matter. The physician assured him that her use of the drug was a mere dissipation, a habit that could be abandon-

ed at will, and advised him that if she did not wish to leave it off, she should be compelled to do so. Her husband urged her to leave off the drug, and she promised to do so and did try faithfully, but of course she could not succeed. Her husband criticised her severely for her failure to keep her promises in the matter, and attributed to her all kind of evil purposes. Finding that these did not avail, he determined to cut off the drug supply. He deprived her of money and notified all the druggists in his town not sell her or credit, and urged them not to sell her opiates at all. This made it necessary for her to resort to many expedients to procure her drug, and even then she was not able to obtain it regularly. When she could not obtain the drug by other means, she would sell her clothing to negroes and get them to buy the drug for her. Another plan was to order groceries and sell them at reduced rates to get money to buy the drug. At times she was unable by any of these means to obtain her drug supply, and at such times she would secure whiskey and drink that. This, of course, disgusted her husband, and his position became one of extreme bitterness toward her. The wife realized that it was out of her power to comply with her husband's wishes and discontinue the use of the drug. The intense suffering that came on when she was out of her drug became an impelling force which compelled her to do almost anything to obtain that which alone was capable of giving her relief. The position occupied by her husband and her physician was so extreme and they so totally misunderstood the necessities of her case that there could be no common ground of agreement between them. They felt that she was pursuing that course from preference, as a deliberate choice, that she had lost all respect for herself and for her family and had become totally depraved, and they treated her accordingly. She was conscious of her faithful efforts to comply with their demands, but was also painfully conscious of the fact that it was out of her power to break the fetters that held her a slave to the drug. Strive as she would she could not do so. Much as she desired to regain the confidence and love of her husband, the unbearable suffering experienced and the extreme desperation brought on by failure of her drug supply impelled her as an irresistible force to turn a deaf ear to all their entreaties, to disregard all promises made to them as to leaving off the drug, to smother all motherly and wifely instincts, if need be, and to continue to resort to all forms of deception and intrigue that were found necessary to obtain her drug supply. It had, in her exper-

ience, become the one supreme necessity of life.

The fifth case, D. G., a young man, aged 18, was given morphine seven months during an attack of rheumatism. At the end of that time the rheumatic symptoms had disappeared and his father who was a physician and had attended him, decided to withdraw the morphine by gradual reduction and, began to do so. Things progressed fairly well for a time, but after the dose had been cut down considerably, the suffering of the patient was extreme. The father had mapped out a plan which he felt he must not vary from. The son suffered intensely for a number of days, but all his pleadings for something more to relieve him were ignored. His father told him that he would rather see him a corpse than for him to continue the use of morphine, and insisted that the course he was pursuing was the only one that promised relief and that he must stand the suffering. The reduction was continued until the last of the drug was withdrawn, but the condition of the patient was most desperate. He could not sleep, had no appetite, was extremely nervous, had an exhausting diarrhea that nothing seemed to benefit, and in many other ways his suffering was unbearable. In this extreme condition the son, by the aid of a friend, secured a supply of morphine tablets. These were used very sparingly, and only enough to overcome the most acute suffering, the young man feeling that if he could only get a little relief he could bear the balance of the suffering and finally get off the drug, which he was very anxious to do. The father noticed the improved condition of the son and felt that he was succeeding in curing him of the addiction. In a few months, however, the son's efforts to hold the quantity down and to keep his use of it concealed were unavailing, and the father learned of it. He was very much incensed at what he termed his son's willful disobedience and deception. He then determined to punish him and cure him at the same time, so he took the drug supply away, put an attendant with him and locked him in his room. Here for the next three days he suffered the tortures incident to the abrupt withdrawal of the drug without treatment, but by the end of that time his condition was so critical that the father became alarmed and gave morphine for relief. This was continued for a few days and then another effort was made to withdraw it, but the symptoms became alarming again and the drug was resorted to. The next year was spent in one effort after another to break up the habit, the father often resorting to harsh means and even cruel treatment in his efforts to force

the disuse of the drug. This only served to widen the breach between the father and son, and to drive the son to more desperate means to obtain the drug supply. He would steal his father's books or instruments, or anything else that he could take from the house without being immediately detected and sell them to obtain the drug. If he could not get morphine, he would get whiskey or any other stimulant. His father looked upon these acts as positive evidence of extreme perversion and regarded him as utterly abandoned and hopeless.

The last two cases are representative of a large percent of the drug users in the United States. They present a sharp contrast when compared with the first three cases reported in this paper. Between them there are all grades and varieties and, while they all use the drug in common, they differ radically in other respects, and I can not regard the traits of character manifested by many of them as being due to the effect of opiates. In studying the history of a large number of cases who were unquestionably of good character prior to the formation of the addiction, I have found that the perverse traits of character were prominent or not, just in proportion as the other influences herein mentioned were present or absent. If the addiction was formed by one who was entirely independent and could secure and use the drug without being interfered with by any one, he retained his integrity, his business and social standing, etc., to a fair degree, but where the habitue was dependent on some one else for his drug supply, and this one a person who did not understand the necessities of his condition, or where his family or friends or, those to whom he was subject undertook to break the "habit" by withholding the drug supply or the means of obtaining it, or where adverse fortune made it necessary for the drug user to resort to deception and other such means to procure the drug, the perverse traits of character was very prominent. These perverse traits were present in proportion to the length of time and the degree of intrigue and deception the drug user was forced to use.

I think the conclusion is inevitable that in the fourth case herein reported the failure of the husband and physician to properly understand the condition of the patient and to provide the relief her condition demanded forced her, in the first place, to begin a life of deception, and their harsh criticism and unjust treatment caused her to continue to pursue a course which they could only look upon as one of extreme dissipation. The same influences were responsible for the conduct of the patient in case five. The mistaken views held by the

father led to the son's wretched condition. No greater mistake was ever made by well meaning persons than to attempt to deprive of his drug supply one who is addicted to the use of morphine. Such efforts only serve to drive the drug user to secret, and often, to immoral acts to procure his drug supply. The only proper and reasonable course is to recognize the condition as a misfortune, a disease, as it really is, and one which cannot be overcome by merely depriving the patient of his drug. It should also be borne in mind that it is a really hazardous proceeding to deprive a drug user of his drug supply, since dementia or death may be the result.

Another case will illustrate still another phase of this subject.

Case six, C. H. T., belongs to a different class. His parents were in moderate circumstances, but lived in the crowded city district, where the son formed acquaintances that were anything but desirable. At 16 he began to drink and gamble, declined to continue in school, and set out to make his own living. His ideals were low and, having no well defined purposes, he obtained employment first at one thing and then another, but painting seemed to be his preference, and by the time he was twenty he had developed considerable skill as a house and sign painter. This enabled him to earn good wages and furnished him means with which to buy liquors. He would work faithfully for a few weeks, but as soon as he accumulated a little money, he would go on a spree and not stop until his last cent was spent and his credit exhausted. His money being gone, the saloons would no longer shelter him and he was frequently taken in charge by the police and sobered up under their care. At other times he would apply to physicians for something to quiet his nervousness and enable him to sober up. This something too often proved to be morphine given hypodermically. This had to him a most delightful effect, bringing quietude to his shattered nerves and rest to his excited brain. He soon learned that under the influence of opiates the demand for strong drink was much less urgent and that he could control himself more fully than when using whiskey alone. Being an adventurous creature, he soon learned the use of the hypodermic syringe, and this led to the daily use of the drug. Things progressed fairly well with him for the next year, as he used much less whiskey but, as he became more and more dependent on the drug his capacity as well as his inclination for work declined. His income decreased until it was not sufficient to support him and supply the drug he was using. He then

began to resort to various expedients to procure his drug. He borrowed from friends until his repeated failures to repay forced them to refuse further loans. His next resort was to besiege the offices of physicians with some feigned complaint and beg them to give him the drug, but physician after physician, tiring of these calls, turned him away without further assistance. Then being more desperate, he began to beg on the streets, and when these appeals did not bring the necessary funds, larceny of any article that he could pawn for a small amount was resorted to. These thefts brought him into prominence in the police courts, and the accounts of his speculations in the papers brought his case to the notice of thousands of people. When he would become known to the people of one town as a chronic beggar and they no longer responded to his appeals, he would make his way to another town, and there under new surroundings he would, for a time, be more successful in obtaining assistance from physicians and from the public. But sooner or later he would be brought before the public as a morphine fiend who had committed some crime, almost always petit larceny. Later on his thefts became more frequent and of greater value, and he is now serving a term in a State prison for grand larceny.

It will be noticed that this man was reared under rather unfavorable surroundings, that he began to dissipate early, had not very high ideals or well-defined purposes, and that morphine was added to the use of whiskey, more as a dissipation than otherwise. This case belongs to a class that forms probably fifteen percent of all drug users—certainly not more than that—but while they are comparatively few in number, they have made a reputation for the entire generation of drug users. They are the ones who have been constantly before the public gaze; they are the ones with whom physicians have so often come into unfavorable contact, both at their offices and at the public institutions, and both the public and the profession have come to look upon them as fairly representative of the entire multitude of drug users. Their crimes and other acts of perversion have been so repeatedly brought to the public notice through the press and the courts that the public have been taught to look upon all narcotic drug users as of this class when, in fact, this is very far from the truth. One drug user of this class will often be brought to the notice of many thousands of people in an unfavorable light, while there are in the same population hundreds of other drug users who conduct themselves discreetly and never expose themselves to the public gaze. Many of

these doubtless compare favorably in character and standing with the first three cases reported in this paper, yet the state of public opinion is such that if their use of the drug were known they would be classed with the perverts and stigmatized as "morphine fiends."

As a result of attributing the perverse traits of character manifested by morphine users to the effects of the drug, both the profession and the public have fallen into the error of looking upon all opium users as of the same class, and, since the comparatively small number of perverts among them are the ones who have become most commonly known, they have made the reputation by which all are judged. Such a conclusion is erroneous, and the opinion based upon it is manifestly unjust. Drug users differ from each other as greatly as do other people. Some of them retain their moral character, their veracity, and even their reputation without blemish, while others become moral wrecks, but it is evident that other influences besides the effects of the drug are potent agents in bringing about that wreckage.

If you will recall for a moment the condition into which a drug user is thrown by being deprived of his drug, as described at the beginning of this paper, I think you will admit that it is unreasonable to expect any human being to enter upon such an undertaking voluntarily or, to submit to being forced into it if it is in his power to prevent it. I do not hesitate to say that an opium user has a moral right to resort to any course of conduct that may be necessary to obtain his drug supply. If that course of conduct should embrace untruthfulness, deception and fraud, it does not place him on the same moral plane with persons guilty of the same acts when the motive which prompts them is gain, personal advancement, or other such motive. In resorting to such acts for the purpose of obtaining a drug supply, if it can not be otherwise obtained, the drug user does only what any other human being would do under the same circumstances, and no one should be condemned for doing that which any one else would have done. Every drug user firmly believes that if he were deprived of his drug supply, he would either die or go crazy, and he therefore feels justified in doing anything that may be necessary to protect himself from such an extremity.

Most morphine users deny their habit, and on that account they are charged with being notorious liars and unreliable in all matters. Here again they are judged with undue harshness. They deny the use of the drug in self-defense, to try to preserve their good name and to protect themselves from

the criticism and censure of their friends, and from the sting of misguided public opinion. Since the motive which prompts an act fixes its moral quality, they should not be so strongly condemned for denying that which, if admitted, would ruin their business and social standing and convict them, in the eyes of the public, of being willful perverts or moral degenerates and lead to their being known and spoken of by the inhuman epithet "morphine fiend." If self-preservation is not the first law of nature, it is one of the strongest, and it is a just and proper motive for human action.

A Contribution to the Pathology and Treatment of Frontal and Ethmoidal Sinusitis and Their Orbital Complications.

By Prof. Dr. Theo. Axenfeld, Freiburg, Germany. Translated by Dunbar Roy, M. D., Atlanta.

I.

It is a well known fact that orbital inflammations are mostly of ectogenous origin and originate for the most part from the "peri-orbital cavities" of the nose. The number of metastatic cases of periosteal or phlegmonous abscess of the orbit of endogenous character is indeed small, and even many cases described under this name, for example those following infectious diseases, would no longer be known as such with our present day diagnostic help. Other ectogenous cases (eysipelas, etc.) rank far less in importance than the nasal.

To form a correct idea of the frequency of the nasal origin of these diseases (and that in the widest sense of the word) one must not only take into consideration those cases in which ocular changes in the peri-orbital sinuses (purulent discharges, pains, swellings, etc.) are preceded by the orbital infection, or where by the operation the connection with the diseased neighboring cavities makes itself still further evident, but also those cases deserve especial watching where sinus changes give little evidence on ocular inspection and where some of the classical symptoms are absent.

It is here to be noted that at the time of the orbital complications, the rhinoscopic appearances need not always show direct evidences of a sinusitis, although such may exist, as can be demonstrated by an exploratory puncture.

Such cases as these which have also often been mentioned in the literature, I myself have repeatedly had under treatment and have availed myself of the competent assistance of my colleague, Prof. Korner (Rostock). In these cases the nasal opening is changed. Although the history

shows in most cases a secretion from the same side, yet this is not always true, for we must not be surprised at the unreliability of the patient's observations. It is also known that electric trans-illumination is not always reliable, especially in acute cases, a fact which I myself have frequently observed.

In order further not to fall in too great an error in regard to the existence of a sinusitis, we must observe, as pointed out by Kuhnt, Killian, and others, that the sinus wall through which occurred the infection of the orbit does not always show a pronounced perforation, especially in the acute suppurative forms. In empyema of the ethmoidal cells, this is not likely to occur since the very thin orbital wall very soon breaks down, or at least shows marked changes. On the other hand changes evident from the orbital cavity are very slight. I have lately operated on a patient after the method of Kronlein where an edema developed in the orbital tissues out from the orbital cells of the ethmoid bone, where an exophthalmus and paralysis had been produced and where no distinct perforation of these posterior orbital cells was found. They appeared thinned and discolored, and on being opened they showed only inflammatory changes, contained a yellowish gray secretion. The rhinoscopic appearances were negative.

In another case where colleague Killian diagnosed the presence of a deep ethmoidal empyema by means of the appearances in the nose and where he relieved an exophthalmus closely bordering on to edema by the evacuation of the same, we would probably also not have found any marked changes on the orbital surfaces.

On the other hand it is by no means infrequent in case of an operation upon the frontal sinus to find an intact orbital roof. In the literature we find such examples as these reported by Panas, Kuhnt, Germow, Killian, Stancilaus, and others, and I have myself in two cases of large subperiosteal abscess under the orbital roof, found this latter intact, although pus was passing from the sinus frontalis on account of which the radical operation was obliged to be made. In such cases the infection does not travel by way of the bone necrosis but through the diploe or intact bone, somewhere along a small emissary (vessel or nerve) or by means of a vein (thrombo-phlebitis).

Such cases of intact orbital roof require marked consideration at the time of the operation. In such an abscess, if we have made the usual incision along the eye-brow at the highest point of the swelling, found pus and have emptied it and we find also

the orbital roof intact, shall we chisel then from here out to the frontal sinus and perform the radical operation immediately? At all events, certainly in all cases of sinusitis I have also treated one of my acute cases in this manner, when, in chiseling away the overhanging orbital ridge which had to be considered in order to have free drainage, I found some pus in the deploe of the bone.

For this opinion of mine which may be of prime importance in reference to the question of the nasal origin of an orbital inflammation, I am able to report the following observations:

Mrs. M. R., 23 years old. Previously healthy, especially in regard to the nose and eyes, suffered an attack of influenza with high fever 39.6 c. On the third day of her illness there was pain in the head on the right side, radiating from the brow, purulent discharge from the right nasal cavity and severe earache on the right side. On the next day, swelling of the right lid, especially the upper, and a day later perforation of the right drum membrane. The pain in the ear grew less but the fever decreased but little and the swelling on the eye increased.

Admission into the clinic at Rostock twelve days after the beginning of the influenza and nine days after the beginning of the above complications. Status, *prasens* on 27 February, 1900, evening; patient is very weak and feeble; respiration and pulse accelerated; over the left lung there are bronchial rales; right side shows marked inflammatory swelling of the lid, especially the upper and the eye-brow; marked exophthalmus with chemosis of the upper part of the bulb conjunctiva, marked limitations in the movements of the globe, especially upwards. The edema of the conjunctiva in comparison to the protrusion of the swelling of the lids, is relatively slight, so that on these grounds and on the normal ophthalmoscopic picture, it is conjectured that there is a periosteal abscess in the roof of the orbit, while a phlegmon of the retrobulbar fatty tissue is not improbable.

In the region of the most marked swelling of the upper lid under the eye-brow, fluctuation is noticeable. There exists severe pain in the region of the orbit and on the right side of the forehead under pressure. Trans-illumination of the frontal sinus is impossible on account of the swelling.

From the right nasal cavity there is a discharge from time to time of thick yellow pus. The examination of the nose shows diffuse inflammation on the right side with marked stenosis especially in the region of the ostium frontale. Right drum membrane

perforated, purulent otitis media (probably extending through the tube. (Professor Koerner). Pressure over the mastoid shows tenderness.

Immediately on the same evening the abscess was opened by means of an incision beneath the eye-brow the whole length of the orbital ridge. By passing a director in under the middle of the orbital plate, exceedingly thick yellow pus evacuated itself. After irrigating the abscess cavity, it was seen to be situated between the frontal bone which appeared to be discolored and the orbital periosteum which was covered with granulation tissue and which was not perforated. The abscess extended from the nasal side, above the ethmoid but without involving it towards the temporal side almost to the suture *zygomaticofrontalis* and to a depth of 3 cm. No where was there any connection with the frontal sinus seen and no opening could be discovered anywhere on the surface of the orbital plate. With the ethmoidal wall the abscess had positively no connection. The granulations were curetted and a partial chiselling of the orbital rim made, but without opening the frontal sinus, irrigation and iodoform packing.

In the pus from the orbital abscess as well as in that from the ear and the same side of the nose, cultures showed *streptococcus pyogene*. The general condition improved and the fever fell immediately. The pus from the nose continued about 8 days and then began to disappear and the otorrhoea subsided. The exposed orbital roof was gradually covered with granulations and the orbital wound gradually grew smaller under the continuous packing while the exophthalmus completely disappeared, as well as the frontal pain. In the course of about two months the orbital abscess closed completely by means of granulations. But since the patient complained occasionally of frontal pain, an exploratory opening of the frontal sinus was aseptically made in the typical manner by means of a new incision over the one previously made for the abscess. An opening about the size of a ten-penny-piece was made by means of a trephine and the mucous membrane incised. The frontal sinus showed itself to be absolutely normal, the mucous membrane pale and smooth and no pathological contents were found. The wound healed by primary union.

Even before this, following the cessation of the nasal suppuration, the rhinoscopic examination (Prof. Koerner) had not been able to show anything further abnormal around the openings of the frontal sinus or even of the other neighboring sinuses.

In the meantime, later, by means of treat-

ment in the otologic clinic, the otitis media was cured and a polypus was removed from the left side of the nose so that the patient was dismissed completely cured. Since then she has remained cured. The right eye again moves freely and is in a normal position, vision equal 1. One-half year later the patient was entirely well.

In the course of a severe influenza it was also a question whether an acute purulent inflammation of the right side of the nose which had produced a perforating otitis media and a subperiosteal orbital abscess under the frontal sinus could not in the same way and manner be the cause of an inflammation of the frontal sinus. That the purulent secretion under the orbital plate was occasioned by the same cause is further substantiated by the fact that in the pus of all three cavities the same streptococci were found.

That this abscess between the bone and periosteum was to be considered as metastatic was out of the question.

That no perforation of the orbital roof was found at the time of the operation, argued, as was pointed out above, nothing against its origin from the sinus, for after the whole clinical picture is reviewed, there can be no doubt as to the correctness of this view.

The exploratory opening of the frontal sinus, made two months after the acute symptoms, showed absolutely normal conditions. This fact, of course, finds an easy explanation in the knowledge that it was an acute inflammation of the frontal sinus.

That an uncomplicated acute sinusitis frontalis frequently heals spontaneously by discharging its secretion through the nose, is a well known fact; furthermore, our observation shows that this is possible to occur also in severe complicated cases. Pus in the orbit, on the contrary, has no outlet, and without operation always indicates a severe condition.

Hence the strange anomaly, that the real cause, i. e., the sinusitis disappears while the secondary process continues on indefinitely. Furthermore, it is a fact that there can be stages of this diseased condition of the orbit in which the real offending sinus will be found healthy. In the literature there are some cases recorded of orbital inflammation produced by acute sinusitis which healed very quickly and without leaving a fistula after the orbital incision. Since in these cases, however, either an open communication between the abscess cavity and the frontal sinus, existed or at least was commencing, even though this had not been established and even though later normal conditions really existed in the sinus; yet, for this reason, we could not

reckon this to be a case of spontaneous healing of the sinusitis. Indeed it seems to me also from these cases that the prognosis in such cases of acute sinusitis terminating in orbital complications is quite different from those chronic forms which also involve the orbit.

In the latter case the radical operation, which in cases of the frontal sinus (according to the new method of Killian) allows so little disfigurement to be produced, cannot be avoided, and for this reason it is best to unite it with the abscess opening.

In acute sinusitis frontalis, especially in healthy individuals, it is rather to be advised that we confine ourselves under the above conditions of the location and treatment of the orbital abscess—supposing, however, that no cerebral complications exist and that with the evacuation of the orbital pus, the fever and the other symptoms immediately decline, as was the case in our patient. If such should not occur, then naturally we should open the sinus immediately, since an extension of the inflammation into the orbit in no wise excludes the presence or development of cerebral complications, as for example, some of the cases reported by Kuhnt. However, I am far from meaning that the termination, as a rule, would be so fortunate as it was in my case, should one allow the sinus to go unopened in a case of acute sinusitis frontalis complicated with an orbital abscess. Usually in such cases the mucous membrane will show very marked changes.

But should one on these grounds and in order to make sure in every case, proceed immediately or later to the opening of the sinus, in order to be sure of the conditions of the frontal sinus, then it would be better to make an exploratory trephining at some distance from the opening of the orbital abscess which would thus permit us to close the sinus again, if as in the case here described, we should find it healthy, and even perhaps doing the same thing if we saw the mucous membrane but slightly affected.

II.

If in a periosteal or phlegmonous orbital inflammation we establish by the operation that it has its origin from a disease of the ethmoidal cells, then the question always confronts us, what is the condition of the frontal sinus? It has been proven by means of numerous cases that the ethmoidal cells are frequently diseased, together with the frontal sinus, more especially the anterior cells of the ethmoid. When at the time of the operation and the removal of the diseased ethmoidal cells, a communication should be found between these and the frontal sinus, we should not hesitate to unite directly this cavity with the frontal

sinus. On the other hand should the orbital plate be intact, there would be no certainty that the frontal sinus was involved, unless something else more decided was found or was demonstrated by a rhinoscopic examination. Furthermore, the question also presents itself as to whether or not the frontal sinus was diseased, and for that reason it would be best for us not to make an exploratory opening by way of the orbital abscess and thus expose the sinus to further infection. We would rather prefer to make an antiseptic exploratory trephining back through the forehead and proceed according to the objective indications.

I have set forth these arguments above because I do not wish to see the conclusion drawn from the report of the cases which follow, that we should immediately open up the frontal sinus directly from the abscess cavity. For although both of these cases show that contact of an unbroken mucous membrane of a healthy sinus with an abscess cavity does not necessarily lead to an infection, yet we should rather not intentionally produce such a contact.

A healthy young fellow, 16 years old, had suffered some days with pain in left side of the forehead, thought to be due to a cold. Without any special reason the frontal pain had very much increased during the evening; there were general symptoms of languor; the left eye was protruding and the upper lid was markedly swollen. There was very severe pain behind the eye-ball. On the next morning he was brought to the clinic.

Status Praesens: Patient feverish, pale and complaining of very severe headache on the left side. There was marked inflammatory exophthalmus and severe swelling on the upper lid under the eye-brow. At this point there was deep resistance to the touch with positive signs of fluctuation. Chamosis was relatively slight and the eye-ball itself perfectly normal, aside from some enlargement of the pupil. There was severe pain in one half of the forehead on left side. At that time there was no pus in the left side of the nasal cavity.

Under anesthesia an incision was made beneath the eye-brow down to the periosteum and the parts lifted up from the orbital plate, under which there appeared a mass of thick yellow pus. This showed that between the orbital plate and the periosteum, a circular abscess cavity had developed, reaching nearly to the ethmoid without touching it. The orbital plate was discolored, but nowhere perforated. The periorbital periosteum was covered with a dirty fibrinous deposit and granulations which were immediately scraped away with

a curette. Beyond this the periosteum was not disturbed.

The orbital rim was chiseled away for better drainage. In this way small points of pus were seen in the diploe of the bone towards the sinus frontalis. For this reason the frontal sinus was immediately opened directly from the orbit. This was found filled with thick pus, the mucous membrane showing marked changes, such as polypoid and gelatinous. Under these conditions the radical operation according to Kuhnt was immediately undertaken. A perpendicular skin incision down to the bone was made from the nasal end of the eye-brow incision reaching 5 cm. above. The anterior and inferior sinus wall was removed, the whole mucous membrane thoroughly curetted and the cavity again irrigated with hydrargyrum oxycyanatum 1:2000. Finally, this part having been accidentally undertaken—the mucous membrane was removed from the bony partition separating the other sinus. When, with no little surprise and fear, a piece of the septum, the size of a five-penny-piece without anything else came away and was removed with the diseased mucous membrane of the sinus. This showed that the bony septum possessed a large physiological opening, over which the mucous membrane of the frontal sinus had formed a covering in the shape of a thin membrane. In spite of this extraordinary thin septum the other (right) sinus cavity, into which we could now very easily see, showed absolutely a normal condition, the mucous membrane being pale and smooth and containing nothing abnormal. Since, luckily, the abscess and purulent mucous membrane of the left side had already been removed, we could hope, in spite of the present free communication, to prevent an infection of the right side. The parts surrounding the opening in the bony septum were cleansed with antiseptic swabs; the outer skin was undermined some distance under the right half of the forehead and then pulled over to the left in such a manner that it made a flap with the surface of the wound and pressed down against the opening in the septum. In this manner it was made secure, after which the perpendicular and brow incision were closed with silk sutures and a small drain left in at the outer end. In applying the bandage, special care was taken by means of tampons, to hold the plaster coverings of the bony defect of the septum securely in place. Healing was per priam. Patient was dismissed in 14 days. The right frontal sinus remained healthy. (This observation was noted for 2 years). The above observation is noteworthy on this account, that it shows that a suppurative sinusitis frontalis, complicated with a

severe orbital abscess may remain limited to one side, although the sinus was separated from the sinus frontalis of the other side by only a delicate fold of mucous membrane. Although a severe infection of the left orbit occurred by means of extension through the bone, yet the skin septum between the two sinuses had held its position and protected the other sinus. This is a new proof of the opinion held, especially by Kuhn, that an increased pressure in the sinus does not necessarily mean an extension by pressure of the diseased condition into the orbit; otherwise the thin septum in this case would have been stretched inordinately and the other sinus likewise become infected. But the infection sought its way independently through the emissaries of the bone whether the pressure was increased or not. At all events it is an interesting fact, under such conditions, that the other sinus remained free from involvement.

In conclusion allow me to report the following case in a few words:

N. N., servant girl, 20 years old, was referred to me by my colleague, Schubart, (Parchin) on account of increasing exophthalmus of the right side. There was very little pain. The history recorded that the swelling had developed rather acutely in about 8 days, yet without any objective symptoms from that side of the nose which as yet showed (Prof. Koerner) no changes indicating a diseased condition of the neighboring cavities—objectively there was noted a certain degree of right sided exophthalmus, especially downward and outward. There was some aedema of the upper lid, ptosis and restricted movement of the globe, especially above. The upper orbital rim was somewhat sensitive to the touch as far as the root of the nose and between the orbital rim and the globe of the eye there was a decided resistance to the touch.

For the next 14 days the patient was given mercury and the iodide of potash, then Fowler's solution of arsenic. In spite of this, however, the exophthalmus increased so that the orbit was opened by means of a temporary resection of its outer wall according to the method of Kroenlein. The usual skin incision was made, together with the necessary skin and bone flaps. Then the periosteum was loosened from the orbital wall without going into the orbital structures. The periosteum was found firmly united to the bone and thickened; in the middle and extending inward it was covered with masses of granulations in which there was only a trace of yellowish pus. The orbital surface was uneven and covered with osteophytes which could be very easily scraped off and with the granu-

lation tissue, these made a peculiar sandy mass. As far as possible the cavity was curetted and then packed with gauze from without. But since a good drainage was not obtained and it was not possible to reach the middle of the orbital wall, after a few days, when the exophthalmus and edema again increased, an incision was made through the whole eye-brow from the Kroenlein incision to the root of the nose. As a result of this, some pus made its appearance which evidently came from the middle cells of the ethmoid. In two sittings almost the whole ethmoid, whose cells contained more or less pus, was curetted through the orbital wound. In this way there was found in one of the posterior ethmoidal cells a large greenish concrement which could easily be divided into smaller particles and which consisted of actinomycotic fungus growth. From the most posterior ethmoidal cells the sphenoidal sinus was also opened and curetted.

With the second complete resection of the ethmoid, the orbital rim was taken away in order to have better drainage and inspection of the frontal sinus. In doing this the bone loosened itself in such a manner that the intact mucous membrane of the frontal sinus was visible to the extent of 5 mm. in diameter. As this was quite pale and transparent and did not protrude, but on the contrary was drawn in perceptibly on inspection, it was not probable that there existed a sinusitis frontalis; and the opening of the mucous membrane from this point was not attempted, because we did not want to expose the sinus to an infection from the diseased ethmoidal bone.

But I have already reproached myself for having thus freely exposed the mucous membrane from a septic cavity instead of having made an aseptic exploratory trephining at a point above.

Although the ethmoidal operation under drainage and a free discharge anteriorly and posteriorly in the nose, took over a month for complete secondary healing, the sinus frontalis remained healthy, as was proven shortly before dismissing the case by making an exploratory aseptic trephining. We have to learn from these two cases that an intact mucous membrane of a sinus can offer an important protection against an infection which lies in direct contact with its outer surface, even if the bone covering it is removed quite considerably, and even if contact with the septic discharge has continued for some time. In spite of the good results obtained in the above cases, it seems to me risky to make of this practically and prognostically such an important sign that we would on this account thus open up freely the exterior surface of the

mucous membrane of a frontal sinus from the point of a septic orbital cavity, for we might not always succeed in safely avoiding a perforation of the mucous membrane which naturally would be much more apt to produce an entrance for the infection. But as a general rule we would proceed by making a distinct separate aseptic trephining. Of course, where other symptoms have shown the existence already of a chronic sinusitis frontalis we might then open it up immediately from the orbit.

In the rhinological literature there are already some reported case which mention similar, if not identical occurrences.

At the fourth meeting of the South German Laryngologists (Heidelberg 1877, published in the *Munchener Med. Woch.*) Seiffert in the discussion of Killian's (Freiberg) paper "On Communicating Frontal Sinusitis," has reported the following; "He knew of a case in which, on account of empyema of the right frontal sinus, this was opened and proven to be in open communication with the left side without this latter being diseased and without becoming diseased later on." Further details over any severe complications in this case have not been published as far as I can find by looking through the literature. An analogous observation (according to Killian) will be found published by L. Mueller (*Wiener Klin. Woch.*, 1895, page 194) where in spite of the communication, only one side was diseased. The original of this article was not accessible to me.

Further cases I have not been able to find in the larngo-rhinological exophthalmological literature. For this reason it must be of infrequent occurrence.

Other cases of communicating frontal sinusitis are fairly numerous, and they have all shown to be diseased on both sides. But when we observe cases where the frontal sinuses communicate freely and this free communication has existed previously without producing an infection or rather a diseased condition of the other side, then after the report of these cases of mine we would be obliged to hold that the danger of opening a healthy neighboring cavity from one already infected was not very great and that in such a case we would at least open it up and curette it as far as the healthy sinus. On the other hand by properly covering the communication, and even perhaps without it, a healthy result is possible and an expectant treatment admissible.

Of 379 applicants for license to practice medicine in the State of Pennsylvania 366 passed the examinations held recently, while 73 failed.

Puerperal Septicemia. *

By Nelson W. Francis, M. D., Starke, Fla.

Puerperal septicemia, also known as puerperal infection, in almost all cases is a wound infection, and, just as this may be slight or serious. Puerperal infection may be a local affection of the external, or it may be a more serious one of the internal genitals, or the whole system may be drawn into the morbid process.

All modern research proves that in the mildest or the severest cases the same morbid element is the same, namely, the presence of the different species of staphylococcus pyogenes and the streptococcus pyogenes. Comil, Clivio, and Monti, have all found the streptococci in the blood, spleen, and heart of patients dying from this disease. Baumm also found them in all infected wounds, yet we may have a complex phenomenon due to different microbes. First of all we must distinguish between a local and a general infection, the latter, of course, is much more serious. Next we must separate the putrid (sapremia) from the septic (septicemia). The infection starts in the vast majority of cases from the endometrium.

In putrid endometritis there is found in the uterus a superficial layer of necrotic tissue, under which is a layer of granulation tissue filled with leucocytes; the latter act as our bodyguard against the entrance of microbes into the system. While the microbic layer is covered with all kinds of microbes they never enter the granulation layer, unless there is an entrance made for them by some mechanical means. In local septic endometritis, the endometrium is much like that in the putrid form, except you have the streptococci added to the infection. General septic endometritis appears under two forms, the lymphatic and the thromb-phlebitic.

In the lymphatic form there is a mixture of the putrid (saphrophytes) and streptococci on the microbic layer, while the granulation layer is much thinner than in putrid endometritis, in the worst form this layer is entirely absent. The infection in this form enters through the lymphatics and then escapes through the walls into the surrounding tissue, causing necrosis. This form often starts from injuries to the cervix. In the thrombo-phlebitic form you have the same necrotic and granulation layer. The germs only enter through the placental site. Here the veins have not been closed as they should be, but have been plugged by thrombi.

I shall not speak of the symptoms

*Read before the recent meeting of the Florida State Medical Association.

of this disease as they are well known to all. In taking up the treatment I shall advocate a change to some extent which I am well aware is contrary to the views of a great many of our text books and as taught us in many colleges; at least up until the last two or three years; on the other hand the severe criticisms that this line of treatment has been receiving is offset by the class of men in our profession who are keeping up to date, "as it were," and making a close study of etiology and pathology. I have reference to the use of the curette. It has been the custom to clean out the uterus with the sharp curette. This is unquestionably wrong. If you will go back with me and note the condition of the uterus you can see why it is so; there is the granulation layer filled with leucocytes guarding the system from an infection of microbes. Now if you destroy this with your sharp curette, you take away one of the best weapons nature has, and then your patient is soon vaccinated with septic poison and, what at first was a localized infection confined to the endometrium becomes a general infection with a hard fight on your hands. I don't go to the other extreme and say don't use a curette at all, but take the middle ground and use a dull wire curette and very carefully clean out all loose placental tissue and decomposed clots and mucus, and then thoroughly flush out the cavity with soda bicarb. and creolin solution at 110 degrees; after this use hydrozone or pure carbolic acid on cotton swab followed by alcohol, now leave a drain of iodoform gauze and lightly pack vagina, clean out in this way once or twice in 24 hours until discharge is free from bad odor. Next turn your attention to alimentary canal by use of salines and calomel, give calcium sulfid gr. $\frac{1}{2}$ every hour until saturation then every 3 hours, viskolen 20 m. hypodermically twice a day. I have seen quicker and more marked results from viskolen in this disease than in any other condition. If temperature runs high use cold water coil on abdomen, don't use depressing antipyretics, for soon as you remove cause your temperature will go down. With one exception, and that was where I saw patient too late, have always brought temperature to nominal in three or four days with this treatment, if I think the patient has already a general infection I give her protonuclein gr. 6 every two hours to increase the leucocytes, if complications arise meet them with appropriate remedies.

The rare operation of suturing an incised wound of the heart was performed by Dr. A. M. Smith, at Los Angeles, Cal., on July 28. Four days afterward the patient was in good condition.

Tuberculous Peritonitis. *

By W. O. Spencer, M. D., Superintendent of Health of Forsyth County, Winston-Salem, North Carolina.

There is no subject of more vital importance, or more interesting to the general practitioner of medicine or to a surgeon, than that of tuberculosis. Especially interesting and important to every surgeon should be tuberculous peritonitis, involving the pelvis as well as abdominal viscera. I shall not hope to bring out anything new, (to you all) on this most important subject at this time, but simply to get a thorough discussion of the same, thereby hoping to derive some benefit from the experience of others who have encountered this trouble. I shall only make a few remarks on the etiology, symptomatology, and treatment, etc., and give a few cases I have had, and results obtained, for so important a subject requires more time for discussion than I can give it now, and I am very sure more than the Society cares to devote to it at this meeting.

Until recent years, (since the advent of aseptic, exploratory, abdominal surgery, but little was known or written on this subject, as to-day is known to the surgeon. Formerly it was treated and classed with the medical diseases, as was appendicitis) to-day it is regarded as a surgical one and treated as such. The results for good by this transition has been more marked even than that of appendicitis. The symptomatology is often times misleading, and an early diagnosis in some cases uncertain, but when a diagnosis has been made, the question as to when to operate is not so uncertain as in appendicitis, pure and simple.

The etiology is the tuberculous bacilli. The chief routes of their invasion into the serous membrane of the pelvis and abdomen are tuberculous intestinal ulceration, including tuberculous appendicitis, the mesenteric glands, through the genito-urinary track, especially through the uterus and tubes. Twenty-eight per cent. of Kelly's cases definitely dated the beginning of their trouble from labor or miscarriage—a large per cent. of these cases are found in women. Sex, therefore, is evidently a predisposition, as more have it without, than with a family tuberculous history. Predisposing causes are not so easily determined as was once thought. A depressed, run-down condition of health does not appear to be such an important factor as one would naturally expect, for in a large majority of these cases we find a history of the patient being rather in a vigorous, healthy state, while in some we get a his-

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

tory of previous ill-health. Contrary to expectation, tuberculous diseases of other organs is not common, not even of the lungs. In fact, often times tuberculous peritonitis of the pelvic organs seem to render an immunity to the diseases elsewhere, according to Osler and Kelly (I do not personally, fully concur with this opinion).

I am quite sure this is a trouble that is often times overlooked and mistaken by doctors, from the peculiarity and irregularity of symptoms in given cases; that is, sometimes mistaken for typhoid fever, malarial fever, puerpal sepsis, and in some cases for tuberculous meningitis (in the very acute cases). In the beginning it is in some cases very difficult to diagnose. In some it may begin suddenly with high and irregular fever, while in others its onset may be slow and insidious, with a general malaise with headache, thirst, insomnia may be present, night sweats, loss of appetite, with more or less gastric disturbance, vomiting, bowels irregular, some are constipated, others have diarrhœa, or an alternation, of one and then the other. Next follows pain in the abdomen or pelvis (depending on location of part involved) increased by exertion, or it may be only a feeling of weight or pressure, exciting pain upon moving; it is rather rare to have much pain in the early stage of the disease. The temperature usually is irregular, from 100 to 104 deg. Fahr., remitting or intermitting and in some continuous, may have chills or chilly sensation, followed by sweats.

It may begin after confinement or miscarriage, with chill or rigor with variable temperature with sweats. In others the temperature after being normal for some time suddenly rises in the evening and assumes a hectic type, in most cases except in the acute stage; the patients are able to get about at intervals; at times may give up on account of general weakness and discomfort. After weeks or months of these remissions and exasperations the patient is compelled to give up entirely on account of increasing debility, pain, swelling of abdomen, usually containing fluid and possible tumefaction due to adhesions, etc., with shortness of breath. As the disease advances there is a rapid increase in malnutrition and emaciation, the skin becomes pale and sallow and dry, alternating with hectic flush, cheeks sunk in. From the above line of symptoms at some stage of the disease it could be mistaken for typhoid fever, malarial, or puerpal fever, as well as for ulcer of intestines, malignant growth (peritoneal cancer) chronic peritonitis. The chief points upon which to base a diagnosis as given by Kelly are:

1st. Often a sudden onset, it may be after pregnancy or miscarriage.

2nd. A history of chills or fever or "malaria," but without the plasmodium, sometime the stage of invasion is put down as "typhoid fever."

3rd. Gradual increase of swelling, termination in a marked enlargement of the abdomen.

4th. More or less constant abdominal pain increased by walking.

5th. Pain upon urinating.

6th. Pelvic masses which cannot be distinctly outlined, either by palpation or percussion: there is something puzzling and peculiar about the relations of the masses to the pelvic and abdominal organs.

7th. Apparent change in the position of the masses in the abdomen noted at subsequent examinations.

8th. Great tenderness on pressure at the vaginal vault and over the lower abdomen, the liver and spleen, as well.

9th. Sometimes an enlarged uterus.

10th. Evidences of an encysted peritonitis.

11th. Emaciation-tuberculous facies.

12th. Slight persistent evening rise of temperature, often with sub-normal morning temperature, lasting for weeks or months.

13th. The discovery of the tuberculous bacilli in vaginal or uterine secretions (or scrapings). When a diagnosis has been made then arises the question of treatment. Some of these cases undoubtedly improve and recover spontaneously without any medical assistance other than general hygienic and dietetic measures; on the other hand a large number either die or become chronic invalids, and resist all medical agencies. The ideal manner of dealing with them, is to operate, "with timely treatment all cases originating in the pelvis," and most of those in the abdomen may be cured. "When seemingly hopeless cases, apparently in the last stages will recover after operation, only those should be abandoned as hopeless when the patient seems to be actually dying, or where there is such an extreme state of prostration and exhaustion, without marked effusion in the abdomen that the attempt to remove adhesions would be manifestly fatal within a short while. The curability of the disease by operation is abundantly demonstrated by the experience of such men as Kelly, Halstead, Deaver, Price, Murphy, Cheyne, and Burghard, of London, and others too numerous to mention.

Why the good results are obtained by simple laparotomy is unknown. It suffices to say to simply open and evacuate the fluid, if any present, wash out and let air

and light in does good, the results of which are very, very considerable, according to the type of disease present. All types may improve and most of them get well by it. The greatest improvement is procured in cases where there is free fluid in the cavity, but improvement also is great when but little or no fluid is present.

When to operate. The most suitable time to operate, as suggested by Cheyne and Burghard, "unless improvement follows medicinal treatment within four or six weeks in acute, or four or six months in chronic ones," the abdomen should be opened, whether fluid be present or not. The operation may do good when it is least expected to do so, and in any case the patient should not be allowed to go down hill too far before doing so. On the other hand it does not do so well to operate too soon for fear of recurrence, which will be the case (strange to say) in some cases. Unless there be evidences of complete obstruction of the bowel by adhesion, etc., the abdomen should be opened early, or at once, with the view of making a short circuit, or even if possible remove the diseased portions of intestines or other primary seat of disease, the latter is a very important question as to whether the primary focus should be searched for or removed. This, however, should depend on the condition of the patient and the extent of the diseased area.

Theoretically it would appear that the primary focus should be removed. Experience has shown that in suitable cases, if seen early by the surgeon, the best results have followed this practice. On the other hand, if the disease is very extensive, as often is the case, in the majority of cases which are referred to the surgeon, then the question becomes much more complex. As a result of what has been done in these cases, we would formulate the following opinion: When the tuberculous disease is definitely located in a small area surrounding the primary focus, when only a small portion (a few coils) of bowel in the region of an intestinal ulcer or appendix, or tube, or when there is only a beginning eruption of tubercles without extensive adhesions, I think undoubtedly that the primary focus should be removed by resection of bowel, removal of appendix or tubes. The results thus obtained are far better than simple laparotomy; provided, the strength and vitality of the patient will admit. In some cases, those far advanced where very great and dense adhesions are present, it is exceedingly difficult to locate the primary focus and to remove it when found, owing to the extreme fragile condition of the tuberculous bowel, as they tear very easily and may establish a faecal fistula or a fatal

perforation by attempting to remove them. In these cases, however, they generally run down and cannot stand prolonged operation, then we should do a simple laparotomy unless the prime focus can be very easily and quickly reached and removed.

Case I.—Miss W. M., aged 17, had never menstruated. Family history negative as to immediate family, but some tuberculous tendency in mother's family. As a child she enjoyed usual good health up to the age of 10 or 12 when she became delicate, subject to recurrent attacks, called by attending physicians malarial fever; had recurring spells of fever, was very obstinately constipated, complained of pain in abdomen. Was called to see her March, 1896. From the remitting character of the fever and other symptoms, I thought it to be malaria at first, and began treating her for same. I soon located a tenderness in right iliac fossæ at McBurney's point with a slight tumor, at that point, extreme tympany and enlargement of abdomen; circulation rather rapid, 90 to 95; temperature ranging from 99 to 103 every other day. It occurred to me the possibility of appendicitis, but under symptomatic treatment it passed off. In May I was again summoned to see her. I found her similarly affected; put her on similar treatment with the same result as before. Again in July she had another attack much more severe. Up to this time I had not disclosed my opinion as to previous attacks, but at this time I told the family she had appendicitis, and had had two previous attacks, I thought, but I did not care to alarm them until it became necessary, in my judgment, to take a more serious step—that of surgical procedure. The family refused having this done until late in the fall. The patient made little or no improvement; in fact, grew worse and finally their consent for an operation was procured. She was admitted to my private house and operated on November 9th. There was a tumor about the size of a cocoon in the right iliac fossæ. An oblique incision about four inches long was made just at McBurney's point. Expected on entering the abdominal cavity to find a considerable sac of pus. On the contrary found a perfect mass of adhesions, the small bowels adhered to ascending colon to posterior wall, appendix bound down. The peritoneum and bowels were studded with numberless tuberculous nodules, the adherent mass forming the tumor, thought to be a pus sac. With much difficulty the adhesions were broken up, appendix ligated and removed. (It was found to be about 2½ inches long and the usual size, with no disease otherwise than the tuberculous condition). The abdominal cavity was thor-

oroughly flushed out with gallons of warm normal saline solution and thoroughly dusted with iodoform, (between one-half and one ounce used) cavity drained; incision was closed and usual aseptic dressing applied; uninterrupted recovery. There had been, prior to operation, local tuberculous manifestations, such as suppuration of the glands of the neck. For several weeks after operation there appeared several spots of lupus, which were curetted and dressed in the usual way. The patient was put on cod liver oil, syr. iodide iron, and Fowler's solution, being somewhat depleted in general health. Later she was given creosote, 3 to 25m ter die, which completely overcame the constipation. She is now (eight years after operation) in perfect health, better than since she was a child.

Case II.—Annie H., white, age 17, Health very good until she began to menstruate, at which time she suffered from dysmenorrhœa (very severe) then was troubled with menorrhagia and metrorrhagia, increasing, to the point of being alarming, from which she became very anæmic and prostrated. Her mother suffered likewise, went unattended; she developed pulmonary and intestinal tuberculosis and died at the age of 28. My diagnosis of the girl was tuberculous endometritis, with stenosis, for which I dilated and thoroughly curetted, from which she recovered and got on very well for two years, except some tenderness in both tubes and ovaries, with some induration or thickening about the tubes. Two years after the above treatment she began with slow fever, ranging from 100 to 103, somewhat irregular, loss of appetite, constipated, bowels irregular, then diarrhoea, increasing pain and tenderness in lower part of abdomen and pelvis not localized, some enlargement, no fluctuation, no tumorfaction or mass perceptible, tongue flabby and white, no red base with rapid emaciation. At first I thought it typhoid fever. After two weeks symptomatic treatment, no improvement, but rather growing worse? Being guided by error in diagnosis in case No. 1, and with former history and that of mother, I concluded it to be a case of tuberculous peritonitis, and advised operation. After some hesitation and deliberation the consent of patient and family were procured. Upon opening the abdomen, in medium line below umbilicus found diagnosis correct. The appendix and both tubes and ovaries were removed, some adhesions which were carefully broken up, cavity flushed out with normal sol. closed in usual way without drainage. Recovery uneventful and rapid; five and one-half years later health perfectly good, gained 18 to 20 pounds in weight.

Case III.—George McK., colored, age 45. Previous health good. Was taken latter part of May with fever running a course simulating the unclassified types of fever we often meet with, neither distinctively typhoid, or malaria. For about two weeks quinine or any other treatment had no effect, other than temporary. For two weeks it looked more like typhoid, then it ran a course of two or three weeks resembling malaria in its periodicity, would not yield to treatment for malarial, nor could plasmodium be found. By this time, or at the end of four or five weeks, there developed a very decided pain and tenderness throughout the abdomen with swelling, later fluctuation; I aspirated and drew off about three pints of fluid, did not look like ascitic fluid. By this time I diagnosed tuberculous peritonitis and advised operation which was refused at first; all the symptoms periodically continued, with rapid and progressive emaciation until six or eight weeks later, when a laparotomy was done, (post-mortem) however, this served the purpose of confirming the diagnosis, and had it been done when first advised I have no doubt in my mind but that he would have gotten well.

Case IV.—Mary L., colored, age 32. Married fourteen years without issue. Previous health up to one year before I saw her good; family history good, especially so as to tuberculosis. About ten months before this illness she had an attack. From her description I inferred it to have been one of appendicitis. She was taken with the attack in question with a hard chill, followed by high fever, 105, after profuse sweating with great pain throughout the abdomen and pelvis. Her condition was such as to warrant the conclusion that she had had a congestive chill, living in a malarial district. I gave large doses of calomel, etc., with very large doses of quinine, 60 to 80 grains in twenty-four hours. This continued for three days, she had either a chill or chilly sensation with fever, from 100 to 104 every day with night sweats for five or six days with considerable pain and tenderness through cavities, drifting into what is called typhoid state, which continued for several weeks. Finally I concluded it to be tuberculous peritonitis by exclusion; advised operation; was granted. Upon opening abdomen found it containing some fluid. The tubes, appendix, cœcum, illium and the entire omentum lower margin was involved with the disease, being crimped like parchment that had been burned around lower margin. This has caused a ridge around the abdomen about half way between umbilicus and pubis. This was all ligated and trimmed off, appendix and right

ovary removed, cavity flushed out with warm saline solution, dried with aseptic gauze and abdomen closed without drainage; recovery rapid and complete. Three years later health perfect.

Case V.—Mrs. M. R., age 33, white. Family history good; mother of six children; health very good, up until about two years before last sickness. I was called to see her fourteen days after confinement, having been attended by mid-wife. I found her with a temperature of 105, pulse 120, having that a. m. had a hard chill, tenderness over entire abdomen and pelvis, followed by profuse sweats. I at once concluded there was a retained blood clot or placental tissue. Without delay, with a blunt curette irrigated the uterus and swabbed out with iodine and carbolic acid, after which the temperature went down to 99 to 100 and continued for some four or five days, then came to normal. For some weeks then there would be a slight rise of evening temperature, normal in morning. With remissions and exacerbations of fever, little or no appetite, bowels irregular, with slowly progressive emaciation. I was trumped as to what was doing all this. I then procured this history: about, or nearly a year before the beginning of last pregnancy she began to fail in health, had at times fever, so they thought, with spells of diarrhoea, with soreness throughout abdomen and pelvis, complained of great weakness, and throughout the justation was weak and debilitated and complained more or less all the while and "had spells of fever, swelling of abdomen and soreness in bowels and would run off and at times passed matter "like a bile had busted," as she described it, there was a hard circular ridge extending from one anterior spine to the other across below umbilicus. Not being able to clear up in my mind as to what was the cause of her trouble, finally concluded it to be tuberculous peritonitis; advised operation; after several weeks deliberation no improvement; finally decided to operate. Upon opening abdomen found some fluid and the entire omentum intestines were covered with tubercles, thousands, I suppose, of tuberculous nodules, some adhesions which were broken up, the omentum largely destroyed. I simply opened, broke up slight adhesions. Was rather afraid to look for the primary focus; simply washed out with saline sol., closed without drainage. She made a very rapid and complete recovery and was well four years later.

Case VI.—Mrs. R. L., aged 38. Mother of nine children. Was called to see her April 22, 1903. Found her to be about six months pregnant, with a very profuse diarrhoea, with some fever 102 deg. F., with

a history of having had for nearly two years recurring spells of diarrhoea, followed with constipation with abdominal pains; was greatly emaciated. I had her under observation for several months, I occasionally gave her a dose of castor oil with the usual remedies for diarrhoea, keeping it in check the best I could until she was delivered, fearing she would not live through gestation. She would have at times chills or chilly sensations, followed with fever from 100 to 103. Microscopic examination revealed the presence of the tuberculous bacilli. On July 26 I was called to attend her in confinement. Upon my arrival I found the head protruding through the vulva; I supported the perineum; delivery was complete in a few moments by slight traction on cord with compression on fundus; the placenta was delivered without the introduction of hand into the vulva. The child was a very stromous delicate one and died a few weeks later. On August 10th I was called to see her. Being out of town two other doctors saw her, they both without examination or inquiring into history pronounced it "*puripel sepsis*," doing but little or nothing, left her. I was called upon my return, August 12, found she had had some chills or chilly sensations with fever (as she had been having) with profuse sweating, diarrhoea as she had had for months, with tenderness all over the abdomen, not localized except just below the spleen or descending colon. I, with the aid of a trained nurse, to be sure of the possibility of there being retained secundies or blood clots in uterus, curetted with blunt curette; found nothing in the uterus, no odor, the uterus was normal, as could be expected. I treated her symptomatically for several weeks. She would have chilly sensations with remission and exacerbations of fever. Sometime she would go ten and twelve days without a particle of fever, then have fever for several days, running from 100 to 104 deg. I urged her going to hospital from the first for treatment, without avail, until September 26th consented she went to hospital. I suggested as a last resort a laparotomy, my diagnosis being tuberculous peritonitis. She being unable to pay her hospital fees was compelled to go in ward under the care of the doctor on the ward for that month. He with others diagnosed the case to be one of puripel sepsis, sent her home in a week or so to die, which she did some ten or twelve days later, with all the symptoms of intestinal tuberculosis. The question has often arisen in my mind, if a laparotomy had been done and the tuberculous focus removed, if she would have lived or not, for I am confident

her's to be a case of tuberculous peritonitis followed by intestinal tuberculosis.

The Prevention of Tuberculosis.*

By T. E. Oertel, M. D., Augusta, Ga.

Since Robert Koch in 1882 gave to the world this remarkable monograph *Die Aetiology der Tuberkulose* there has been a progressive enlightenment of the minds of both profession and laity in regard to the so-called "white plague."

The movement against tuberculosis is daily increasing in momentum, and the most gratifying results have attended its efforts.

To-day the scientific world is agreed that tuberculous affections, whatever their nature, are the direct result of the entrance of tubercle bacilli into the animal tissues and their multiplication there.

It is entirely superfluous to present to the Society evidence to substantiate this fact.

It would seem that a paper upon the prevention of tuberculosis with a view to awakening interest in the subject should also be unnecessary, but unfortunately facts do not warrant such an assumption.

It is estimated that over 150,000 deaths occur in the United States each year from T. B. (1)

The census of 1900 gives for the State of Georgia 9.84 per cent. of the total deaths as the mortality from T. B. (2). The mortality statistics for 1901 from Public Health Reports 8.09 per cent. of the total mortality given for this State as due to T. B., but this is evidently a low estimate, as it represents a population of only 151,601, many of our larger cities being omitted from the report. (3)

As has been shown elsewhere by myself, the death rate from T. B. is probably very much higher in our own State that would appear from our mortuary tables.

But granting that we have a proportion of 10 per cent. of all deaths due to T. B., then if there are any methods of prevention against the disease, surely we should avail ourselves of them, nor have we done our duty to the public unless we use our best endeavors with this end in view.

Between the ages of fifteen and forty four T. B. causes *one-third* of all deaths that occur. (5)

If then we consider that T. B. is pre-eminently a disease of young adult life, 42 per cent. of all deaths between the ages of twenty and twenty-four being due to it, while between fifty-five and sixty-four the mortality percentage of T. B. is reduced to 5.5. (6) we are confronted by the fact

that tuberculosis chooses its victims from among those who are just reaching the productive age, so that from an economic standpoint alone the disease is a factor of no small import.

Infection of the animal body may take place in the following ways:

1. By transmission from mother to child in utero.
 2. By direct inoculation through trauma.
 3. Through the alimentary tract from infected food.
 4. By inhalation of infected material. (7)
- Infection by either of the first two methods is rare.

Regarding primary infection through the alimentary tract from infected food, much might be said and a brief review of the subject will not be amiss.

Prior to 1901 when Koch read before the British Congress on tuberculosis the celebrated monograph (8) which caused such a stir in the scientific circles, it was quite generally accepted as a fact that bovine tuberculosis was frequently transmitted to human beings through the agency of milk and infected meat.

When Koch asserted that "I should estimate the extent of infection by the milk and flesh of tuberculosis cattle and the butter made of this milk as hardly greater than that of hereditary transmission, and I, therefore, do not deem it advisable to take any measures against it" (9) he raised a storm of protest and stimulated renewed effort in research in the endeavor to settle this question.

The result has been the accumulation of an overwhelming mass of evidence to prove that human beings can and frequently do contract tuberculosis by infection with the bacillus of bovine tuberculosis.

Ravenel asserts that the "strongest proof of the transmission of T. B. to the human being through milk infected with bovine tubercle bacilli is the finding of bovine tubercle bacilli in the intestines of children who have died of intestinal tuberculosis." (10)

The Committee on Animal Diseases and Animal Food of the American Public Health Association after exhaustive review of the literature of the subject in concluding their "Third Report" say "The subcutaneous infection of cattle with pure culture of the tuberculosis bacillus from human sources, which according to Koch, yields quite specially characteristic and convincing results," has proved, in the hands of the German Commission no less than in those of independent investigators, that bovine tuberculosis is communicable to man. It will require much work to decide with even approximate accuracy the proportion of

*Read before the recent meeting of the Georgia Medical Association.

human tuberculosis caused by animal infection; but the fact that 25 per cent. of the cases in children investigated by the German Commission, and 50 per cent. of similar cases investigated by DeSchweinitz, showed by this test that they were caused by animal infection, is sufficient to convince us that measures should be taken and enforced at once to guard against infection from this source." (11)

Dorset, drawing conclusions from data gained by experimental inoculation by him of a series of rabbits and guinea pigs states that he believes "that in bovine and human tuberculosis we have to do with organisms differing usually in virulence, but between which there is no other essential distinction." (12)

More final still is the statement that "bovine tubercle bacilli introduced into the human tissues by accidental inoculation have lived, multiplied and produced disease at the point of inoculation and have been recovered after a considerable time with their vitality and virulence unimpaired." (13)

To illustrate the danger that may lurk in cattle apparently healthy, we would best consider the following conclusions of Mohler in his valuable and recent monograph:

1. "The tubercle bacillus may be demonstrated in milk from tuberculosis cows when the udders show no perceptible evidence of disease either macroscopically or microscopically.

2. The bacillus of tuberculosis may be excreted from such an udder in sufficient numbers to produce infection in experimental animals, both by ingestion and inoculation.

3. That in cows suffering from tuberculosis the udder may, therefore, become infected at any moment.

4. Cows secreting virulent milk, may be affected with tuberculosis to a degree that can be detected only by the tuberculin test.

5. The physical examination or general appearance of the animal cannot foretell the infectiveness of the milk." (14)

It may be well here to emphasize the fact that cattle are in no wise injured by the tuberculin test. (15)

From such information as I can gather I am led to believe that in Georgia, and in fact, in the South, as a whole, there is comparatively little bovine tuberculosis. But unfortunately we have no data upon which to base conclusions, and it is high time that measures were inaugurated to remedy such a condition.

The most common mode of infection is through the respiratory tract by inhalation of material containing the T. B.

The tubercle bacilli come directly from a case of tuberculosis and do not multiply outside the human body as true saphrophites. (16)

The usual source of infection is the dried sputum which comes from the mouth and nasal passages of a tuberculous subject during coughing, sneezing, and even when talking.

It has been shown that in the act of coughing infected mist may be driven to the distance of 1.5 metres. (17)

Fortunately the tubercle bacillus is soon killed by the action of direct sunlight, but under conditions even slightly protective it may retain its vitality for a long time. Tubercle bacilli have repeatedly been found alive and virulent two years after leaving their human host, they having resisted successfully dissiccation and the action of light for this length of time. (18)

But the facts relative to the transmission of tuberculosis through the agency of sputa are too well known far us to waste time in their consideration.

I think we may allow from the foregoing that our mortality from T. B. is at least ten per cent. of the total number of deaths, and that the two factors of production of the disease are ingestion of tubercular food and inhalation of tubercular material and that the latter is with us the more usual method of infection.

The questions that naturally arise are:

1. Are preventative measures possible?

2. If so, what are they?

3. Are we availing ourselves of them?

In answer to the first question—are preventative measures possible, it goes without saying that if we know the source of contagion, we are in a position to combat it.

If then human beings ate no tuberculous food, and inhaled only pure air, T. B. would rapidly disappear from the human race.

Coming to the second question—what preventative measures are at our command, we will best arrive at a conclusion by considering those in use in the communities that have been most successful in the fight against tuberculosis.

In several foreign countries and in many of the northern and western states, a systematic inspection of meat and of all dairy herds is carried on. The latter is accomplished by the tuberculin test being made on each individual of the herd at stated intervals. The value of this test is fully established, and the per cent. of error to which it is subject is very small. All cattle found suffering from T. B. should be condemned and slaughtered at the expense of the State, the owner receiving a fair compensation for his loss. Milk from cows re-

acting to the test should under no circumstances be used. It will be seen that it needs only effort on our part to effectively guard against contagion by infection with bovine T. B.

The problem of caring for the sputa of tuberculous human beings and the T. B. laden mist before spoken of, is a much greater and more difficult one, for here we have to combat also the hydra-headed monster—*ignorance*. This is the greatest bar to a successful solution of the matter.

If every consumptive knew his condition and were fully instructed as to his duty towards humanity at large, T. B. would soon be a rare disease. In making this statement, I am aware that the personal equation must be taken into account, that, in other words there are those who care little whether others suffer through their acts or no. But granting this, is not the root of the evil in fact *ignorance* rather than viciousness?

Education then is the key to the situation, and it is through this agency that what has been accomplished was possible. For you may make laws without end, and they will have little effect unless they are such laws as will instruct as well as restrain.

The tubercular patient himself is the one who must check the spread of T. B. and we must see to it that he is fully instructed in his duty to himself and his fellows.

Nor must we rest content with this, the tubercular patient must be educated before he is tuberculous, in plainer teams, we must educate the public at large so that the individual may be in a position not only to guard against infection, but should he become infected be cognizant of the more common symptoms of tuberculosis and thus be brought to apply for examination and treatment before the disease has reached the third stage.

Who of us has not repeatedly been consulted by a patient who has not before sought medical advice, and whom we have found in the pitiable condition of advanced pulmonary tuberculosis. *Ignorance* again!

Without pausing here to discuss in detail the methods employed, I invite your attention to the following tabulation showing the death rate from pulmonary tuberculosis in some of the chief cities of the world during the past ten years.

In all these cities there has been a systematic war waged against ignorance on this subject. (19)

Table.—Comparative death-rate per 10,000 inhabitants from pulmonary tuberculosis in some American and foreign cities for ten years 1893-1902, inclusive.

1893—Boston, Mass., 28.60; Philadelphia, Pa., 23.94; New York, N. Y., (old

city) 29.14; Chicago, Ill., 14.47; Brooklyn, N. Y. (old city) 23.42; St. Louis, Mo., 18.91; London, England, 18.90; Paris, France, 42.00; Berlin, Germany, 25.73; Vienna, Austria, —; Glasgow, Scotland, 22.13; Liverpool, England, 23.38.

1894—Boston, Mass., 29.27; Philadelphia, Pa., 22.05; New York, N. Y. (old city) 25.74; Chicago, Ill., 13.75; Brooklyn, N. Y. (old city) 23.55; St. Louis, Mo., 16.20; London, England, 17.34; Paris, France, 39.61; Berlin, Germany, 24.33; Vienna, Austria, —; Glasgow, Scotland, 22.71; Liverpool, England, 21.11.

1895—Boston, Mass., 26.92; Philadelphia, Pa., 21.04; New York, N. Y. (old city) 27.86; Chicago, Ill., 13.56; Brooklyn, N. Y. (old city) 23.17; St. Louis, Mo., 17.85; London, England, 18.15; Paris 42.25; Berlin, Germany, 24.07; Vienna, Austria, —; Glasgow, Scotland, 22.76; Liverpool, England, 17.24.

1896—Boston, Mass., 25.73; Philadelphia, Pa., 21.15; New York, N. Y. (old city) 26.10; Chicago, Ill., 14.27; Brooklyn, N. Y. (old city) 21.89; St. Louis, Mo., 18.00; London, England, 17.59; Paris, France, 38.88; Berlin, Germany, 23.35; Vienna, Austria, —; Glasgow, Scotland, 19.03; Liverpool, England, 18.94.

1897—Boston, Mass., 24.37; Philadelphia, Pa., 19.66; New York, N. Y. (old city) 24.95; Chicago, Ill., 13.41; Brooklyn, N. Y. (old city) 20.40; St. Louis, Mo., 16.61; London, England, 17.62; Paris, France, 37.02; Berlin, Germany, 21.04; Vienna, Austria, —; Glasgow, Scotland, 19.86; Liverpool, England, 18.94.

1898—Boston, Mass., 22.90; Philadelphia, Pa., 20.88; New York, N. Y. (old city) 25.08; Chicago, Ill., 14.64; Brooklyn, N. Y. (old city) 21.86; St. Louis, Mo., 16.07; London, England, 17.68; Paris, France, 38.43; Berlin, Germany, 20.99; Vienna, Austria, —; Glasgow, Scotland, 19.38; Liverpool, England, 18.08.

1899—Boston, Mass., 22.27; Philadelphia, Pa., 22.23; New York, N. Y. (old city) 26.00; Chicago, Ill., 12.90; Brooklyn, N. Y. (old city) 21.51; St. Louis, Mo., 17.04; London, England, 18.88; Paris, France, 39.40; Berlin, Germany, 21.42; Vienna, Austria, —; Glasgow, Scotland, 19.67; Liverpool, England, 19.64.

1900—Boston, Mass., 22.23; Philadelphia, Pa., 21.00; New York, N. Y. (old city) 25.69; Chicago, Ill., 15.30; Brooklyn, N. Y. (old city) 20.90; St. Louis, Mo., 17.49; London, England, 17.50; Paris, France, 40.10; Berlin, Germany, 24.52; Vienna, Austria, —; Glasgow, Scotland, 19.08; Liverpool, England, 19.25.

1901—Boston, Mass., 22.96; Philadelphia, Pa., 22.29; New York, N. Y. (old

city) 24.97; Chicago, Ill., 14.19; Brooklyn, N. Y. (old city) 20.46; St. Louis, Mo., 18.86; London, England, 18.18; Paris, France, 40.51; Berlin, Germany, 21.93; Vienna, Austria, 36.23; Glasgow, Scotland, 18.56; Liverpool, England, 18.97.

1902—Boston, Mass., 20.65; Philadelphia, Pa., 21.07; New York, N. Y. (old city) 22.87; Chicago, Ill., 14.04; Brooklyn, N. Y. (old city) 18.78; St. Louis, Mo., 18.21; London, England, 16.64; Paris, France, 42.55; Berlin, Germany, 21.42; Vienna, Austria, 34.40; Glasgow, Scotland, 16.72; Liverpool, England, 18.93.

The death-rates were calculated on the official figures sent from the above cities.

It will be seen that there is a substantial decrease in the death-rate in almost every instance. When we take into consideration the fact that the work has just begun, it is safe to hope that the coming decade will show results still more gratifying.

The statistics from Germany where the crusade has been more systematic and general than in any other country, are worthy of our serious consideration. I quote from a recent Consular Report. (20)

Decrease of Mortality from Tuberculosis in Germany:

United States Consul-General Richard Guenther, of Frankfort, Germany, under date of December 17, 1903, reports that the monograph of Professor Mayet, Twenty-five Years of Statistics of Mortality, published by the German Imperial Office of Statistics, furnishes a gratifying picture of the decrease of mortality from tuberculosis in Germany. It says the mortality from this cause in the German cities of 15,000 and more inhabitants, for every 10,000 people for every five years was, on the average, as follows:

1877-1881	-	-	-	357.7
1882-1886	-	-	-	346.2
1887-1891	-	-	-	394
1892-1896	-	-	-	255.5
1896-1901	-	-	-	218.7

Here is a decrease of 139 per 10,000, or considerably over one-third in the short space of twenty-five years. And more than this in the first five years the decrease is 11.5 while in the last five years of the series it is 36.6. I think you will grant me here is food for thought.

And this has been accomplished how? One may answer broadly by educating the people. I contend that the enforcement of anti-spitting regulations is primarily educational, for in a short time there is no need to enforce the law, the people having themselves become their own police. And so with compulsory reports of tubercular cases.

Here is the text of a letter received by the

Health Department of the City of New York, from an Eastside tenement.

"Sirs:—A tenant by the name of D— at the premises of A Street, room —, has a boarder by the name of A— B—, who has consumption. This man where he goes spits, and the party where he boards at has six children. Please see that he is taken out. By doing so oblige,

Neighbor." (21)

And now we come to the point where we must pause and ask ourselves what are *we* doing to prevent tuberculosis.

In order to be in a position to intelligently answer this question, I wrote a circular letter to the Boards of Health of fourteen of our larger cities, asking the following questions. I received nine replies.

	No Answer	
	Yes	No
1. Have you an anti-spitting law?	7	2
2. Is it enforced?	5	
3. Are T. B. patients instructed by the Board of Health as to care of sputa?	1	8
4. Is report of T. B. cases compulsory?	2	7
5. Is report of T. B. cases requested?	1	5
6. Do you require disinfection of premises after removal or death of T. B. patient?	6	3
7. Do your statistics for the past five years show an increase or decrease from death by T. B.?	1	6
8. Is T. B. increasing in the negro race?	7	2

And so you will perceive that in only *one* city in our State is an effort made to instruct the tubercular patient in his duty to his neighbor, by the proper care of his germ laden sputum.

It gives me pleasure to announce that the city which has thus set itself upon a hill, is the one whose genial hospitality we are now recipients of—the city of Macon.

You will note that seven of the nine report an increase of T. B. in the negro race.

It would be an easy matter to show that the disease is much more common among the negro than in the white race.

The Board of Health of Atlanta report no increase of T. B. in the negro, but the following significant figures. For the past five years the deaths from T. B. numbered 1155, of these 429 white, 726 negroes. The negro population is about 40 per cent. of the total population, so that we have shown in round numbers over twice the proportionate number of deaths from T. B. in the negro.

The same is true of Augusta (22) and I believe of Southern cities in general.

So that in our most ignorant, unstable and drifting population lies the chief danger to the public, and we have here presented a problem difficult of solution indeed.

It is simply another phrase of the "White Man's Burden" which we must take up and bear as best we may.

From the foregoing we may draw the following conclusions:

1. T. B. is a communicable disease.
 2. The sputa and nasal secretions are with us the chief sources of infection.
 3. Infection by T. B. may be prevented.
 4. The prevention of T. B. must be brought about by concerted action.
 5. Such action embraces the enactment of laws enforcing proper hygiene on the part of the T. B. patient on the one hand, and the public on the other.
 6. The education of the public, through the endeavor of the medical profession, local Boards of Health and by free public lectures.
 7. The enforced periodic investigation of dairy herds by the tuberculin test.
- The time is ripe for action. Let us put our shoulders to the wheel—and then push.

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The Treatment of Genito-Urinary Troubles.

By Brose S. Horn, M. D., Ex-Physician Indiana State Prison, Marion, Indiana.

While physician of the Indiana State Prison, I saw many cases of chronic genito-urinary troubles which presented the common symptoms met with, such as pain on urination, ammoniacal decomposition, and pyuria. The pain varied from a slight distress to the most intolerable anguish. The patient is depressed from the constant pain and frequent micturition. They generally pass cloudy urine full of ammonia, bacteria and blood. In severe cases, a foetid odor may be detected. On examination we find the cause of the trouble to be from urinary deposits, such as in oxaluria and phosphaturia, etc., and excess of uric acid and the urates may be the source of irritation. The patient complains of a sense of weight in hypogastrius and perineum, with a dull dragging pain. This frequency of urinary troubles and the unsatisfactory results following the many different kinds of treatment, often causes us to become pessimistic. No doubt gonorrhoea is the most frequent cause of diseases of the bladder and the genito-urinary tract in general. Cystitis being the most frequent of all the chronic inflammations of the urinary tract we may take it as an example for consideration. My experience with hundreds of these cases at the hospital taught me to always examine the urine closely. Many cases will show a general decline in health. The appetite may be impaired. The skin dry and hard. If the main irritation is in the bladder, we will find the trouble has either started in the kidneys or come up through the urethra. It may be an extension of a urethritis or caused by some irritant eliminated from the kidneys. From a therapeutic standpoint, we are not inter-

ested so much as to just where the irritation is located as we are in what will cure the patient. In such cases I found that the administration of Cystogen is followed by alleviation of the pain and irritation. When a patient is passing cloudy urine full of pus, ammonia, blood and epithelial cells, I am in the habit of giving Cystogen in five grain doses in a full glass of water every three or four hours. A marked change can be detected in from 24 to 48 hours after its administration, due largely to the fact that this chemical neutralizes ammonia in the urine. In a few days the general health of the patient is improved, and in time the Cystogen will produce a perfectly clear acid condition of the intravesical urine. The following cases will show the influence that this drug exerted upon the conditions mentioned.

Case 1.—C. H., age 39, male, white. Loss of appetite, pain on urination, pyuria, etc. Urine cloudy with bad odor. Patient could not sleep at night, had been suffering for two months, was treated with many kinds of medicine, and had been irrigated time and again. He was gradually getting worse, when he fell into my hands. I prescribed 5 grain doses of Cystogen given every three hours, and noted that within 48 hours, the urine had become clearer. This was due largely to the fact that the formaldehyde which this chemical liberates in the urine had prevented decomposition and its chemical action had neutralized the ammonia. Patient improved rapidly and on the 8th day was dismissed cured.

Case 2.—John W., age 42, male, white. Patient was very much emaciated; complained of pain on urination; urine highly colored; also complained of pain in the back. Was given Cystogen, 5 grain doses every 3 hours, and improvement was noted from the first day of treatment till well.

Case 3.—Samuel G., age 34, male, colored. Patient complained of pain, frequent micturition, etc. Urine contained pus, blood, ammonia and epithelial cells. Cystogen was administered in 5 grain doses every 3 hours. Result, recovered.

Case 4.—Harmon G., age 29, white. Patient had a constant burning in urethra and bladder. Urinates frequently, a highly colored urine filled with pus and a little blood. Treatment, bladder irrigation and Cystogen 5 grain doses 4 times a day. Recovery in five days.

Case 5.—Forrest E., age 40, white. Patient is emaciated and weak. Has been suffering with bladder trouble for over a year. Urine highly colored and of a disagreeable odor. Patient's bladder was washed out with warm boric acid solution and was given 5 grain doses of Cystogen

every 3 hours. In four days the irrigation was discontinued but Cystogen continued for 14 days when the patient had no symptoms and was discharged cured.

Case 6.—Morris F., age 27, white. Irritation of the bladder, urine highly colored, and containing pus. Cystogen administered as in previous cases, and the patient discharged well.

Case 7.—Julian B., age 40, white. Constant desire to urinate and pain in the bladder. Under treatment of Cystogen the symptoms disappeared in three days.

Case 8.—James O., age 31, male. Diagnosis, cystitis. Urine highly colored, containing blood and epithelial cells. General health much declined. The bladder was irrigated a number of times and Cystogen given in 5 grain doses. After ten days the trouble had entirely disappeared.

Case 9.—Hugh D., age 25, white. Chronic cystitis. Had been treated for several months with different methods without results. Cystogen was given as in other cases, and recovery followed in eight days.

Cystogen has a direct action upon the mucous membrane of the genito-urinary tract. Formaldehyde is eliminated in the urine, which bathes the whole tract from the gromorulus of the kidney to the meatus with a mild solution of formaldehyde. This solution has the peculiar action of neutralizing ammonia, and it is due largely to this fact that we have the happy effects from this chemical in alkaline urine. It prevents the formation of pus, allays irritation and overcomes decomposition. In any case where a sure but mild diuretic is indicated Cystogen is of a great value and should be given a trial. The physician should observe the urine and a marked change will be noticed for the better after this drug has been administered, particularly if it is used in a case of alkaline cystitis. The test tube will give true evidence. A once cloudy urine that becomes clear and loses its odor is sufficient proof that the medicine is doing the work properly. There is just enough formaldehyde deposited in the urine when Cystogen is administered, to act upon decomposition and prevent bacterial growth. In those cases which suffer from an excess of uric acid, or in fact from any urinary deposit which causes irritation, Cystogen in the form of Cystogen aperient (which is an effervescent form of Cystogen combined with phosphate of soda) will give marked relief. Since writing the above my experience in the treatment of chronic cystitis has been much more extensive, and I take the liberty of appending the following cases which more clearly exemplifies its action in alkaline urine, and the uric acid diathesis. Its compound with phosphate

of soda in an effervescent form (Cystogen Aperient) is a happy mixture, and will be found useful, especially where the urine is acid and where a mild cholagogue action is desired. I find that the citrate of lithis acts well in connection with Cystogen. This is my favorite treatment of gleet and the chronic forms of gonorrhoea. As Cystogen produces an acid condition of the urine, it is desirable to use it with an alkaline in cases where the urine is acid.

Case 1.—Female age 54, has been troubled with regularly recurring attacks of colic, due to uric acid. Apparently she is perfectly sound otherwise. She gives a history of having had six typical attacks of renal colic, in the past six years. The attacks are generally ushered in by general malaise, with a dull heavy dragging pain in the region of the left kidney. This is followed by vomiting, with its attendant depression and agonizing pains that can be controlled only by the use of the hypodermic injection of morphia. During these attacks the urine becomes bloody and very irritating to the bladder. Once or twice, acute cystitis supervened. The examination of the urine at this time proved the existence of uric acid in considerable quantities with a few epithelial and pus cells. I prescribed Cystogen in 5 grain tablets to be taken in a full glass of water 4 times daily. Cautioned her not to eat too much meat and requested her to report at my office in three weeks. Something occurred that called her away from home and I did not see her until after the time for her expected attack (some six months after). She reports that she has taken Cystogen regularly three times daily, and that the attack that she feared had not occurred. The urine does not irritate the bladder and no deposit is noted in the urine. As my attention has just been called to Cystogen Aperient (Cystogen with phosphate of soda in an effervescent form) I put her on a regular course of treatment, using the Cystogen Aperient, as it possesses a cholagogue action that Cystogen alone does not possess.

I have watched the above case for some months, and am pleased to state that the colic has not recurred since last reported. I ascribe this happy effect to the action of Cystogen, as I have had similar results in other cases.

Case 2.—Male, age 71. Gave a history of catheter life of some years standing. I knew that his bladder was full of ammonia as soon as he entered my office, as the characteristic odor soon filled the room. Here was a case that had defied many good physicians, as he had for years, been passed down the line, with an irrigation here and medicinal treatment there. Examination

proved the existence of an abnormally large prostate; very painful to the touch. The urine was foetid; filled with the characteristic mucous pus, blood clots, epithelia and bacteria. The reaction was distinctly alkaline, and as I have said before, of ammoniacal odor. The examination proved nothing more than a case of simple hypertrophy of the prostate gland with an accompanying decomposition of the intravesical urine. This case could be treated by three or more methods, i. e., first, eucapsulation of the gland, with all its attendant dangers. Second, irrigation, with a painful operation, daily, to be looked forward to; or third, by judicious internal medication. As the patient was quite feeble and emaciated, I rejected the first two methods as dangerous, and bethought myself of a genito-urinary germicide that I had used with success while I was connected with the State prison. Accordingly, I ordered Cystogen tablets (5 grains each) to be given dissolved in a full glass of water four times daily. My first observation of any change in the case, was a loss of the alkaline reaction and the disappearance of the ammonia. This occurred 24 hours after I first saw the case, and was the cause of an almost complete cessation of the tenesmus and pain on urinating. Another very happy change for the better came in the form of uninterrupted sleep which he had not enjoyed for weeks. The only way I could account for this rapid improvement, was the disappearance of the ammonia, which I know to be the exciting cause of the inflammation. The urine was still filled with pus and stringy mucous, but its irritating qualities and foul odor had disappeared. Being much elated in my success, I persisted in the treatment, noting that as the days passed by, the urine was fast losing its cloudy appearance, and the patient was fast regaining his strength. At this writing, some three weeks after the beginning of the Cystogen, I report as follows: The urine is of an acid reaction—of a clear amber color—with few epithelial and pus cells in evidence. Examination, per rectum, proved the existence of a prostate somewhat reduced in size, firm to the touch and slightly sensitive. This condition of the gland I attribute to the acute inflammation of the bladder and the removal of its exciting cause, ammonia. He uses a small rubber catheter regularly three or four times daily, and will do so as long as he lives. His sleep is not disturbed, and the comfort he experiences, brings much happiness to his family. Of course, he will have to continue the tablets, but in reduced doses. I believe that one tablet a day will be all that is necessary from this time forward, as his urine is now in an almost nor-

mal condition. My excuse in bringing this case to your attention is to point out to the many invalided old men of this country a line of treatment that brings much relief to a very distressing condition. In cases as old and feeble as the above, I strongly advise against operations of any sort, with few exceptions. Should he in time, find it impossible to use the catheter, I would do a supra public cystotomy.

Case 3.—Male, age 23. Gives a history of having contracted gonorrhoea some months ago. As is frequently the case, instead of going directly to his family physician, he dosed himself on quack remedies and quack doctors, until his bladder became infected. When he presented himself for examination, he had a well defined case of acute cystitis, with all its attendant symptoms; such as frequent micturition, highly acid urine that was filled with pus, mucous in shreds, and epithelial cells. I immediately irrigated the bladder with a warm boric acid solution and prescribed Cystogen (in five grain doses) combined with sodii bicarbonas (15 grains) to be taken in a full glass of water T. I. D. My object in giving the Cystogen combined with an alkali, was to alkalize the urine, and at the same time get a germicidal action from the Cystogen. I called on the case that evening and introduced a sedative suppository which ensured sleep for the night. The next morning as I found him resting easy, I did not irrigate the bladder, as I could see that he was progressing nicely. I made no change in the treatment until the urine lost its acid reaction, when I substituted lithia instead of the soda bicarbonas and was much pleased to note the happy results of the combination. In a little over a week I had him out of bed and in a fair way to complete recovery. The urine at this time presented an almost clear appearance of neutral reaction. Microscopically, it showed a few pus and epithelial cells with a slight cloud of mucous. I present this case to show that Cystogen given alone would have been inadvisable, as the urine was already of a highly acid reaction, so I neutralized it with an alkali, and at the same time availed myself of the germicidal action of the Cystogen.

Case 4.—Male, age 37. Complains of pain in right kidney, that is much intensified by pressure. Urine alkaline, offensive, and filled with blood, phosphates and pus. Great emaciation. Gives a history of renal colic, but complains of constant pain in right kidney. Is of a very nervous disposition and passes urine frequently. Diagnosis renal calculus of right kidney, of phosphatic origin. Prescribed Cystogen tablets (five grains each) to be taken in a

full glass of water four times daily. For his general condition, an elixir of the iron quinine and strychnine phosphate was employed, to be taken before each meal. I saw this patient daily for the first three weeks, and observed that the first effect of the Cystogen was the disappearance of the phosphates in the urine and a lessening of the constant desire to urinate. At the end of three weeks he had gained in strength, but was still suffering with the constant pain in right kidney. Urine of neutral reaction and contained blood and pus in diminished quantities.

August 1st, 1903. Patient still complains of slight pain over right kidney. He has gained seven pounds in weight and his general condition much improved in appearance. The urine still contains some blood and pus, but diligent research failed to reveal anything of the phosphatic deposit. My next observation of the case was in the following month, when he presented himself at my office in a very happy frame of mind. Examination of the urine at this time failed to reveal either blood or pus. It was of normal color and acid in reaction. Pain on pressure over kidney had practically disappeared, and as he was on the point of departure for California, was much elated over his recovery. I cautioned him to continue the Cystogen in diminished doses and to combine it with citrate of lithia, as I feared the Cystogen would produce a very acid urine, if continued alone. It has been some months since I last heard from him direct, but I hear that he has had no recurrence of the trouble.

Case 5.—Female, age 35. Has suffered several years from what she terms rheumatism. The attacks came at irregular periods, and were decidedly affected by atmospheric changes; when an acute attack supervened which generally put her in bed for several days at a time. The intensity of the attack varied greatly; the pain being principally located in the feet, heels and ankles, during which time she was completely incapacitated for work of any kind. There was no perceptible redness or swelling of the affected parts and no rise in temperature during the attack. The urine was found to be highly charged with uric acid and was of a deep red color. I prescribed a tonic and Cystogen Aperient in a full glass of water four times daily, to be taken half an hour after meals and at bed time. The patient had an attack about a week after taking Cystogen, but none since. She has gained in weight and has a good appetite. For fear of a recurrence, I instructed her to take Cystogen tablets three times daily, for two weeks, then discontinue for a week throughout the summer. At this writing,

some seven or eight months after, she is reported as doing nicely and still continues the line of treatment I laid out for her.

I cite this case as exemplifying the value of the aperient in a simple case of acute rheumatism. Its action as an eliminator of uric acid certainly proved efficient and at the same time, I observed that it proved to allay the pain in the affected parts.

Adenoids in Children—A Plea for Early Recognition and Treatment.*

By R. J. Teague, M. D., Roxboro, N. C.

MR. PRESIDENT:—My apology for presenting the subject of adenoids in children is the realization of the fact that there is no pathological condition met with in childhood that causes as much suffering and misery as enlarged adenoids, and at the same time it is the most neglected. Osler says, that in spite of the thorough ventilation of the subject by specialists, practitioners do not appear to have grasped, as yet, the full importance of this disease. It is a subject which should interest the general practitioner as much, or even more, than the specialist, as it is he who is first consulted.

We are indebted to Wilhelm Meyer, of Copenhagen, for having first brought the subject, in its clinical and pathological aspects, before the medical world, in 1868. Holt says, that the enlarged adenoid is the source of more discomfort and the origin of more minor ailments than any other pathological condition in childhood. In order to better understand the pathological conditions attending enlarged adenoids, we should not lose sight of the fact that the mucous membranes of the Eustachian tubes and middle ear, the mucous membranes of the nose and pharynx, are all continuous with the post nasal space. Normally there are groups of lymphoid tissues or glands in the vault and posterior wall of the pharynx. This embryonic or lymphoid tissue is excited to hypertrophy under slight irritation during childhood. It may consist "of one large mass with broad base completely filling up the vault of the pharynx, rendering nasal respiration impossible, and by pressing on one or both Eustachian tubes interferes with hearing; or, in other cases the growth may extend down the posterior wall of the pharynx, to such an extent as to be seen when the tongue is depressed, or the palate is retracted. In young children the tissue is usually soft and friable, very vascular and spongy, easily breaks down and bleeds freely. In older children and adults it is apt to be harder and fibrous. In

some instances they are lobulated and warty in appearance, quite friable and easily removed. While on the other hand the fibrous variety is firm in texture, has a stronger attachment and is removed with more or less difficulty. Chronic hypertrophic rhinitis, follicular pharyngitis and chronic enlargement of the faucial tonsils are intimately and almost invariably associated with cases of enlarged adenoids.

Etiology.—That condition known as lymphatism or lymphatic diathesis is responsible for most cases of adenoids. In many instances it seems to be hereditary. In some families every member, including father and mother, have enlarged adenoids. Delicate and rachitic children are more disposed to have it. Children of consumptive parents are specially liable. It is more prevalent in a cold damp changeable climate. It sometimes follows measles, diphtheria, and scarlet fever. Influenza is a fruitful source, and oft repeated ordinary coryza sometimes causes it, and in other cases is caused by it. Some cases are congenital, and most cases begin to show symptoms about the second year of life, though no age is exempt. Many cases begin to show symptoms about puberty, while many others begin to atrophy and pass away at this age, and in nearly every case they leave the mucous membranes of the pharynx nasopharynx, Eustachian tube and the nose, in a crippled and abnormal condition, in which condition treatment can at best only palliate. Adenoids in adults is more frequently met with than is generally supposed. I have had in my limited practice quite a number of adult patients, in some of whom the growth was so large as to completely fill up the naso-pharynx, rendering normal respiration impossible. According to some observers it is more commonly met with in females. The Jewish people are peculiarly liable to it.

Symptoms.—Adenoid subjects do not, as a rule, breathe well through their nose. In many nasal respiration is impossible. They are known as mouth-breathers. The voice is changed in character and becomes the nasal or wooden voice, as it is called. There is an inability to pronounce the nasal consonants "M and N." Stuttering is frequently observed. In the very young the symptoms are more of a chronic catarrhal nature, with a constant discharge from the nose. In older ones it is more of the obstructed variety. One of the most characteristic and at the same time striking objective symptoms of adenoids is the facial expression, the mouth is opened and the cheek flattened, the bridge of the nose is wide and flat, the inner canthi are pulled down and the eyelids are drooped, The

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

root of the nose is puffy and oedematous. The face has a stupid and sad expression which no other form of nasal stenosis gives rise to. The pharynx may have a nodular appearance, and in chronic cases there may be a dry form of pharyngitis, (pharyngitis sicca) due to the fact that the air is not properly warmed, moistened and filtered, and consequently it abstracts moisture from the mucous membrane of the pharynx. The constant irritation of which causes dry catarrh. Mental dullness is in most cases well marked. Children cannot, in this condition, concentrate their minds, they learn slowly. In cases of long standing they are as dull and idiotic as they look. The eyes are dull and expressionless. This condition is in part due to sluggish lymph circulation in the base of the brain, nocturnal enuresis is very often associated with post nasal obstruction.

The sleep is disturbed, the child breathes through the mouth and snores, rolls and tosses in bed, the throat becomes dry, the child wakes up and calls for water. Night terrors are common and many nervous phenomena manifest themselves, such as laryngismus stridulous, asthma and mild convulsions in some cases. The child awakes in the morning dull and unrefreshed, but brightens up as the day advances. Very often there is a dry, hacking, troublesome cough, which does not yield to medication. Chorea is a frequent symptom of adenoids. Some of the most important and at the same time most common symptom are ear troubles of various kinds. In Swinburns' clinic twenty-seven per cent. had middle ear disease. Wokes thinks that in England twenty per cent. had diseases of the ear. Meyer in his original one hundred and two cases found that seventy per cent. had aural complications. I think a conservative estimate in this country is sixty per cent. of all persons who have enlarged adenoids have more or less interference with hearing. The oft repeated ear-aches of childhood means adenoids pressing on the Eustachian tubes in most cases. Bacon, one of the best otologists in this country, says, that acute catarrhal otitis media is often due to enlarged adenoids. A very large per cent. of deaf mutes have adenoids. In many instances we find perforated or retracted drums in children which shows that the middle ear has shared in the pathological process. A much larger number of cases of meningitis have their origin in chronic suppurative otitis media than is generally supposed. From the middle ear the infection passes to the mastoid cells, causing acute mastoiditis and abscess, or a chronic suppurative process is established which fin-

ally passes to the brain causing meningitis, abscess, and death.

For the purpose of this paper we will say that the functions of the nose is respiration. First, a passage way for the air in breathing. Second, warming, moistening, and filtering the inspired air. Normal respiration should take place through the nose. It has been proven that the air in normal respiration passes directly upward from the nostrils to the superior meatuses, whence it falls toward the choana or posterior opening of the nose into the pharynx. The main currents of the air pass into the nasopharynx at the highest choanal arches, or superior meatuses, to a less degree in the middle, and still less in the inferior meatuses. Thus we see that a small enlargement of the adenoid tissue even slightly encroaching upon these openings interferes with normal respiration. The interior of the nose is completely lined with mucous membrane richly supplied with blood vessels, especially the lower and the posterior ends of all the turbinates, a part of whose function it is to warm and moisten the air. When the temperature is cold the turbinate swells, the vascular tissue is filled with warm blood which raises the cold air to a higher degree of temperature.

According to some observers the inspired air receives from twenty to forty degrees of heat and becomes nearly saturated with moisture in its passage through the nose. It is thus rendered suitable for the interchange of oxygen and carbonic acid gas in the lungs. The conditions are present for a perfect osmosis, a warm fluid on one side of a membrane and warm moist air on the other. Bosworth has calculated that about a pint of water is secreted by the structures entering into the nose together with the tears in twenty-four hours for the purpose of moistening the inspired air. The functions of the nose in filtering out germs and dust is almost perfect, which is a great protection to the delicate pulmonary alveola.

Let us look for a moment at the effect of impaired nasal respiration. The air improperly warmed, moistened, and filtered, passes into the lower air tract. The mucous membranes of the larynx, trachea and bronchi, are irritated and manifest a catarrhal tendency. The epithelial cells lining the air vesicles (normally only one layer) becomes irritated also. The cells at first swell and then pile up until the lining is from two to twelve layers deep. The truthfulness of this statement has been demonstrated by Ballenger, of Chicago, by microscopic examination of air vesicles of guinea pigs that had breathed for a long time, dry dust laden atmosphere. Because of this thickening a deficient amount of

oxygen is absorbed by the blood. Faulty oxygenation of the tissues results and uric acid is freely formed and circulates through the system. The thickened vesicle walls prevents or retards the proper elimination of carbonic acid gas and other waste products, and allows it to accumulate in the blood in excess. When it is thus in excess it poisons the leucocytes and thereby impairs their functions.

If we but pause and think for a moment we shall readily understand why these children are so poorly developed, why they have barrel-shaped chests and pigeon breasts; why they have chronic nasopharyngeal catarrhs; why they have chronic bronchitis; why they fall a prey so readily to disease; why they later in life make up such a large per cent. of those who fill the consumptives' grave. And let me say right here that by early removal the child will be born anew, as it were, and put in the best condition, other surroundings being equal, for a perfect physical development and go a long way towards eradicating the dread disease, consumption, of which so much is being said and written about preventive measures, isolation, etc. My plea is to put these children in a position to let nature fight their battles for them, and with a perfect physical development stamp out as far as may be these predisposing factors.

As previously stated, hypertrophy of the turbinals and tonsils are intimately associated with enlarged adenoids. The abnormal tissues furnish a lodgement and a good culture field for germs of various kinds which readily pass into the Eustachian tubes, thence into the middle ear and mastoid cells. In the nasal chambers they may pass into the various accessory sinuses causing antrum abscess, ethmoid and frontal sinus disease with all the consequences attending those pathological conditions, rendering the patient's life miserable.

The enlarged adenoid presses upon the Eustachian tube interfering with the proper ventilation of the tube and tympanic cavity. The retained air becomes rarified and finally absorbed. This condition produces hyperemia which ends in suppuration, middle ear abscess, or a chronic catarrhal condition with thickened mucous membranes which finally obeys the inevitable law governing all such pathological conditions, namely: shrinking and contracting of the thickened membrane. Then we have following in the wake of this process a thin, white and retracted drum membrane. The ossicles are bound down more or less firmly. The mucous membrane of the ear shares in the process as does that also of the Eustachian tube. The ear is robbed of its normal secretion. Tinnitus is sometimes present

to a distressing degree, and permanent dullness of hearing results.

It may require several years to complete this picture, but in the great majority of these cases we have warning in time to prevent this condition, in the repeated head colds and earaches of children, which unfortunately is looked upon by the family and sometimes by the physician as a necessary evil of childhood, but if rightly interpreted, is a call for the removal of the offending adenoid which is pressing upon the Eustachian tube. I also believe the above pathological condition is directly responsible for most cases of atrophic rhinitis.

Diagnosis.—Now a few words in regard to diagnosis and I pass on to treatment. In older children it is readily made with the rhinoscopic mirror. In children under fourteen years of age, it is best done with the index finger when the location and size of the vegetations can be readily mapped out. The finger should be protected by a metal shield or a turn or two of adhesive plaster to prevent chafing the fingers against the child's teeth. In nervous and excitable children it is sometimes best to anesthetize them.

Treatment.—As I have already taken up so much of your valuable time I shall speak of treatment in a general way and refer you to your works on surgery for the minor details and technique of the operation. In my opinion the only treatment worthy of the name is early, thorough, and complete removal, before the chronic pathological processes in the adenoid and surrounding tissues have commenced, as then any line of treatment will be only palliative at best. The position of the patient is largely one of personal preference. In small children I prefer them lying on the back with the head hanging over the edge of a table supported in the hands of an assistant. By this position blood does not enter the windpipe. A mouth-gag is placed in the left side of the mouth. The index finger of the right hand is passed up behind the soft palate into the vault of the pharynx, and the location and size of the vegetation is thus mapped out. A Gottstines' curette is inserted sidewise, rotated and elevated, then make a single sweep from before backward well down on the posterior pharyngeal wall. Then similar strokes are made on either side, being careful not to wound the Eustachian tubes. The curette should be carried well up close to the choanal openings so as to leave no fragments of tissue in this region. The index finger is again inserted and with the finger nail breaks down remaining fragments of the adenoid tissue. The throat should be well mopped or sponged out and the patient kept in bed for

two or three days. For these children primary ether anesthesia is best and safest. For large children and adults, the upright or sitting position, and cocaine anesthesia is preferable. After treatment is very little. Occasionally sponge the throat out and spray the nose and throat with Dobell's or other antiseptic solutions. Plenty of fresh air with the syrup of the iodide of iron and cod liver oil should be given in all cases. Bleeding is often very profuse for a few seconds, but in most cases it stops readily. If it persists the rhinopharynx may be packed with strips of gauze soaked in peroxide of hydrogen. The operation should be done whenever nasal respiration is interfered with or ear symptoms are developed, before chronic changes in the tissue commence, as then treatment cannot eradicate but only palliate, and the patient will go through life with a post-nasal catarrh, or some other pathological condition of the organs of respiration or of hearing. Sometime they recur and require removal the second time. One contra-indication for operation is acute inflammation of the middle ear. The operation should be deferred until acute symptoms have subsided. Now, gentlemen, without taking more of your valuable time, let me say inclusive that philanthropists have given money and have erected institutions all over our land for the treatment of those unfortunates—the consumptives; some of the best physicians of the country have given their substance, and time and talent chasing the microbe in the laboratory, in the hope of recovering some serum, germ destroyer, a panacea for that dread disease. How near to that goal we shall have reached, time only will tell. When the medical profession realizes the great and solemn responsibility resting upon it, and its duty is faithfully and scientifically performed; when every physician treats those unfortunate children, the rachitic and the lymphatic mouth-breather as they should, scrapes out the adenoid, straightens the deviated septum, and shrinks the hypertrophied turbinal and restores normal respiration, so that the little unfortunates can drink in Nature's own remedy and tissue-builder in the way and manner that the Creator intended; then will the hospitals and institutions for the care of the unfortunate deaf and dumb have fewer inmates, and the grave will have been robbed of many of the victims of meningitis and abscess of the brain, and the great white plague, the scourge of the human race, consumption, will have fewer numbers; and the medical man will have for his reward the consciousness of duty well performed, of precious

lives saved, and the everlasting gratitude of an appreciative clientele.

A Source of Infection During Operation Hitherto Not Sufficiently Recognized.

Mendes De Léon (*Medical Press and Circular*) points out that while no less than thirty papers have been published during the past five or six years dealing with the way we should sterilise our hands, very little attention has been paid to the breath and saliva as sources of infection. That saliva is discharged in the act of speaking may be proved by speaking on to a looking-glass held from 25 to 30 centimetres from the mouth, as after speaking a few words the surface of this glass becomes spread over with small drops of saliva. Huebner, after rinsing his mouth with a culture of *bacillus prodigiosus*, spoke on to agar plates prepared for the experiment, and in twenty-four to thirty-six hours a multitude of red colonies were distinctly visible upon the plates. The writer, in order to exclude the microbes of the air, had a box made with an opening about as large as the mouth on its upper side, and a sliding drawer at its base. After sterilising the apparatus he opened the sliding drawer, put an agar plate upon it, and shut it immediately, so as to be sure there were no aerial microbes in the box. He then spoke in the box the words which he had spoken during an operation—which had been written down by an assistant. The plate, which was shown to the meeting, contained colonies of streptococci, diplococci and staphylococci. He had in all made hundreds of such experiments, and invariably found streptococci, diplococci, staphylococci, and an aerial microbe. Careful calculations were made to ascertain the number of microbes in a drop of saliva, with the result that 4375 was arrived at as the probable number. As fully sixty drops of saliva are given off in speaking 200 words—which is supposed not to exceed the number spoken at an operation of average length—the number of microbes that might fall into the wound would be about a quarter of a million. To prove the virulence, or otherwise, of mouth organisms about 60 animals—guinea-pigs and mice—were inoculated with cultures of microbes, procured from the author's own mouth, with the result that eight guinea-pigs and ten white mice died. Experiments to find a remedy against this source of infection point to the wearing of a respirator, containing some cotton-wool, as the most effective, as agar plates spoken on through this remained sterile, while numerous colonies grew after speaking through a gauze mask of either one or two thicknesses.

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THE VIRGINIA MEDICAL SOCIETY TO THE FRONT.

One of the most important questions which has ever been debated at any of its meetings will come up for final consideration at the approaching session of the Medical Society of Virginia next month.

Briefly speaking, it is simply, will Virginia medicine as a profession, take its place to the forefront marching in solid phalanx with the great leaders of our profession throughout the Union to carry the beneficent influences of medical society organization to the rank and file of the doctors in their own homes? Or will she, inspired by the influence of certain gentlemen who do not desire the masses of the Virginia profession brought under medical society influences, be a laggard in this important movement which has been for three years past actively engaging the attention of many of the brightest and best of the American doctors?

Under the old plan of organization the Virginia State Medical Society always wielded an important influence in shaping the medical affairs of the State, but it can be seriously questioned, despite the splendid personnel of the Virginia profession, if it has ever exercised to the fullest possible extent its potent influence on legislative matters relative to the public health problems, State medical examination affairs, etc., etc., compatible with their knowledge of what is best for the people of the State concerning these things. It may also well be questioned if the great masses of the profession have ever felt any real active interest in the State Medical Society and its various interests—an influence which must be felt before the full power of a State medical society has been exerted in behalf of a better standard for medical men and things in general appertaining to the profession.

We take it that Virginia doctors are no exception to the rule which very generally obtained under the old plan of State medical society organization, the majority of the doctors are not interested in the concerns of the State medical society, do not attend its meetings, do not receive its annual transactions (except as they chance to see a sample copy of some journal containing a report), pay nothing to its support—in short the masses of the profession in this, as it was in other States prior to the organization of the State society with the county

medical society as the unit of organization, feel that the State society is no special interest of theirs and they cherish but scant regard for its work. A few of the larger cities have their local societies, but for the great mass of the Virginia doctors throughout the State there is no professional contact in medical society with his fellow doctors, and there never will be until the present plan of organization is changed and the county society made the unit of organization. It is up to the leaders of the profession in the Old Dominion to move to the front and place Virginia doctors in possession of opportunities to which they are legitimately entitled. Let the State society at its coming session adopt (with local modifications to suit Virginia's special conditions) the State society constitution adopted more than a year ago by North Carolina and upwards of thirty other State societies. This constitution makes the county society the basis of all medical society organization and places the passing on the credentials to fitness for medical society membership in the hands of those best fitted to judge—one's local colleagues, those who best know him! Then let every county of Virginia have its own local society with its members by virtue of such local society membership, members of the State Medical Society without any additional action on the part of any one save and except the reporting of the names and payment of the annual dues by the local secretary to the State society.

In North Carolina this plan has worked well, as the recent splendid session held in Raleigh, attested. Never before in the history of the profession of the Old North State were so many doctors gathered together. And the papers were presented in abundance, and notwithstanding the House of Delegates met in another hall and transacted the business of the society, yet every moment of the session's time was devoted to the study of medical papers and addresses—the most important work for which the medical societies meet! When this State was organized under the new plan there were only eight local medical societies in North Carolina; now there are more than seventy-eight. Then the State society had a paid-up membership of less than three hundred. For five years prior to re-organization the average attendance (exclusive of applicants attending the sessions of the Board of Medical Examiners for license and the representatives of the various drug and instrument firms) of members of the State medical society was hardly one hundred each year as indicated by a careful comparison of the registered attendance for the various years. At the last meeting the actual registered attendance of

bonafide paid-up-to-date members of the component county medical societies of the Medical Society of North Carolina was 321—more than double what it had ever been at any previous session! The annual reports of the officers showed a paid-up membership of more than 1000, a very handsome percentage enrollment of the entire profession of the State when it is recalled that the State Auditor of North Carolina in the annual report for the same year reported the number of practicing physicians in the State paying doctor's tax as 1278.

And while in no sense belittling the personnel of the membership of the State society of years ago (it was in deed and in truth the *creme-la-creme* of the profession) or the splendid work they did, yet the fact remains that under the new regime the work of the State Society will be more far-reaching in its beneficial effects upon the whole profession of the State. In one year's time the number of local societies was increased from eight to more than seventy-eight, the paid-up membership of the State Society increased more than three-fold, the registered attendance almost trebled.

Financially, it of course follows the Society has prospered too, and the volume of transactions issued last year was the handsomest sent out by any State Society of the union except New York's, and the 1904 volume will exceed it in size and number of important papers published.

Last, but by no means least, is the splendid improvement in the personal relations of the doctors growing out of the engaging of the local members of the profession in medical society work at home with their own neighbor practitioners. This has been a matter of frequent remark by the officers of the State Society and of observation by myself as District Councillor by the receipt of letters telling of the better state of feeling among the doctors of the county since the organization and regular meetings of the county society. This result is, I candidly believe, one of the most beneficial to be achieved by the thorough organization of the profession.

In Tennessee where re-organization was also effected in 1903, a precisely similar improved state of affairs exists. So also in Pennsylvania, Maryland, and elsewhere. In this connection it may be worthy of note that when this re-organization matter was being considered in Maryland, no less a distinguished personage than the eminent American recently called to a distinguished professorship in medicine at Oxford, England, Prof. Wm. Osler, entered enthusiastically into the spirit of the work, believing it would be productive of great and lasting

good to the rank and file of our profession and accepting the position as one of the District Councillors in Maryland last year, gave of his splendid energies to organizing the county societies of his district.

We cordially commend "re-organization" to our esteemed Virginia confreres and urge them to let not the petty jealousies of men who simply do not want to be compelled to fraternize in local county societies with competitors of the same city or county in order to retain their membership in the State and National Medical Societies, prevent the complete re-organization of the State Society along modern lines. Then when the change is made let the organization of the county societies proceed. We await Virginia's move in this highly important matter with much interest.

THE OBLIGATIONS OF THE GENERAL PRACTITIONER TO THE APPENDICITIS PATIENT.

After fifteen years of dissension on the part of surgeons and of internists, sentiment on the question of the correct treatment in cases of appendicitis from start to finish is still far from crystalized. This being so we cannot reasonably expect the average general practitioner to possess an accurate conception of his duty in this class of cases. Most assuredly he cannot be justly censured if an occasional life be lost in consequence of his ignorance. Opinion is not unanimous even regarding cases which are seen within the first 36 or 48 hours of an acute attack of appendicitis. However, no one of authority disputes the fact that if every case were operated by a competent surgeon during this period there would be no mortality from appendicitis, or almost none.

But what is to be done after the lapse of 48 hours? This is the question which troubles most. Deaver, who has operated on some 4,000 cases, strenuously advocates immediate operation at any stage of the disease. Murphy, with over 2,000 cases to his credit, also believes in immediate operation in every case. N. Senn operates immediately in gangrenous and perforative cases, but in non-perforative and non-suppurative cases after 48 hours he awaits the subsidence of the attack. He mentions the difficulty of positive early diagnosis of perforation and septic peritonitis in some cases, from which we infer that he would invariably operate in such cases when in doubt. E. V. von Bergmann, while admitting the rationality of early operation in every case, is not at all insistent upon it and in mild cases does not operate, nor does he advocate operation after the subsidence of an attack if the symptoms disappear. Warren and Gould

advise operation in every case of well defined appendicitis, either early or after subsidence of the attack. They do not insist on early operation as soon as diagnosis is made, but wait for severe or progressive symptoms. Berneys operates immediately in all cases. Roux believes in operating in every case, either early or after subsidence if possible. Kocher operates in every case early or during late quiescence and when abscess is clearly defined. When the case is first seen during beginning improvement he waits. A. J. Ochsner urges operation within the first 48 hours, but after that period has passed he places the patient on exclusive rectal alimentation until subsidence of the attack or circumscription of the infective process is established. He believes in operating in every case at the safest attainable time.

Thus we see the variation of opinion is chiefly one of degree, and not of principle. Each surgeon will act in accordance with his best judgement, and in surgical cases of whatever nature his judgement is probably better than that of the average general practitioner.

Having become convinced that appendicitis is a surgical affection, the general practitioner and the internist can no longer remain in doubt as to the nature of their obligations to the appendicitis patient. This, of course, involves early diagnosis, and, should the services of a surgeon not be available, the family physician ought to operate in a certain few cases—emergency cases. In the vast majority, nearly all, of the cases the treatment safest for the general practitioner to pursue from the beginning of an attack is exclusive rectal alimentation as advised by Ochsner or starvation with opium seminarcois until the attack subsides and the patient can be sent to a surgeon. The family physician sees most cases early, at a time when this treatment will tide almost every case over the attack. Diagnosis can all but invariably be made within the first 12 to 24 hours if the sequence of symptoms emphasized by Murphy be kept in mind, namely, sudden and severe abdominal pain; nausea or vomiting; general abdominal sensitiveness most marked on the right side, or especially over the appendix; elevation of temperature, which begins from 2 to 24 hours after the onset of pain.

THE WAY THE ENGLISH TEACHERS SEE US.

The English government recently sent a commission to the United States to study our educational methods. The commission consisted of two medical men, Professor Bradford and Professor Gaskell. Both of these gentlemen are internationally known,

and the compliments that they pay us are very much appreciated, and their slight criticisms should be carefully considered. Their views were recently published in the *British Medical Journal*. They mention the enthusiasm that they notice among our medical teachers and among our medical students. This, to any one who has had an opportunity to observe, can easily see the striking difference between the teachers and students of the two countries. While the maximum graded course of study in the United States for the medical student covers only four years, for the medical student of Europe it covers five years. They acknowledge that the medical student in this country, with his enthusiasm and his constant efforts, accomplishes as much, if not more, before he graduates than the medical student in Europe, who is more deliberate and less enthusiastic and industrious.

They also mention our excellent and magnificent laboratories, lecture halls and libraries, that constitute a part of the most of our universities. They say that our non-clinical subjects and our laboratory practice are especially well developed, and they recognize, as we naturally supposed they would, the growing disfavor of systematic instruction by lectures.

The report, or opinion, which altogether is very complimentary to our medical profession in America, did not think that our clinical facilities were equal to that to be found in England. The writer is inclined to think that this criticism is just, but the teachers in our leading universities are recognizing more and more every year the advantages of clinical teaching, and it will only be a few years before they will equal in this method of teaching, that of any other country. They say that scientific investigation in the United States has reached a very high order of development. They suggested in this report to their confreres, the reversing of their method of teaching bacteriology. We, in this country in the most of the universities, include this branch in the first or second year. It comes in the senior year usually, in most of the European universities.

THE OBLIGATIONS OF THE SURGEON TO THE APPENDICITIS PATIENT.

This is a matter which is still somewhat unsettled as a general proposition; less so as to individual surgeons. The general mortality of appendicitis has gradually receded from approximately 25 per cent. to, say, 8 or 10 per cent.

Now, if we take the mortality of appendicitis when the cases are in the hands of the best physicians or surgeons from the onset of the attack the mortality is *nil* if the advice and treatment are followed.

That different plans of treatment are followed by different surgeons does not necessarily much affect the final results, because the one who waits instead of operating during the first 24-48 hours of an attack does so only in the cases of patients who appear to be progressing favorably. Occasionally, a cog will slip and he will lose a patient, while those who never wait beyond the first 36 hours almost never lose one.

For several years surgeons congratulated themselves if their appendicitis mortality remained under 10 per cent., then the era of larger experience and greater skill came to their aid, resulting in a gradual reduction of the mortality rate to under 5 per cent., even as low as 2 per cent. This in individual series of from 300 to 1000 cases of all varieties of appendicitis. Taking the acute cases alone the results are different. Formerly the mortality varied from 30 to 50 per cent. Since the beginning of the present decade a leading eastern surgeon reports his mortality in several hundred acute cases as approximately 15 per cent. and his general mortality 5 per cent. He operates immediately on every case at any stage. A surgeon of the middle west gives his mortality in the last 100 cases as two per cent., and the series included several cases of suppurative peritonitis. Another surgeon in the same locality gives his mortality in about 200 acute cases as three per cent. and his general mortality as two per cent. The first of these western surgeons operates immediately at any stage, while the other defers operation after the first 48 hours.

It is reasonable to assume that the general mortality of appendicitis should remain considerably under five per cent. The means of keeping it below this point vary materially with different surgeons, but the lines are becoming more clearly defined each year. If one surgeon can show a mortality rate of two per cent. under the plan of immediate operation in every case, while another attains an equally low percentage under the plan of waiting in a certain class of cases, who is to judge? Each surgeon must be his own judge as to his work. Just so long as he can equal the best and surpass most clinicians in his results he will be slow to adopt another's method of treatment. Each surgeon is, however, under obligation to keep informed about the methods and results of other surgeons and to search for flaws in his own methods when he finds his results are not equal to the best. In other words, he should not be "hide bound."

It must be acknowledged that certain surgeons acquire special skill in the employment of methods which in the hands

of any other fail to yield as good results. It follows from this that what may be the best course for one surgeon to pursue might be disastrous for others of otherwise equal skill. In summing up general results due allowance must be made for preeminence. Every surgeon must, of course, follow the methods which in his experience seem best. From the data at hand it seems to us that every surgeon should advise operation in all cases of appendicitis during the first 24-48 hours of an attack, and after subsidence of an attack in those not seen in time to operate during the attack. This advice, if followed, would practically do away with appendicitis mortality.

THE S. R. FOWLE MEMORIAL HOSPITAL.

This is the name of a new hospital located at Washington, N. C., and that is under the supervision of Dr. D. T. Tayloe. It is, we understand, a modern, up-to-date hospital in every respect. It has accommodations for over thirty patients, with well arranged and thoroughly equipped operating rooms.

The belief is steadily growing, not only among the members of the profession, but the laity, that well equipped small hospitals afford facilities for the treatment of medical and surgical cases that are not available in any ordinary home, and the prejudice against institutions of this kind is rapidly passing. In a well regulated and thoroughly equipped hospital with efficient nursing and perfect dietary regime, where all the remedial aids are accessible and where the patients are kept directly under the supervision of the physician, many lives are saved that would otherwise be lost.

A training school for nurses has been established in connection with the hospital. This is an essential feature for all institutions of this kind. It will not only supply to some extent a local demand for this class of skilled assistance, but help to fill a general want that seems to be rapidly increasing.

Dr. Tayloe, who is at the head of this new hospital, is President of the North Carolina Medical Society, ex-President of the Board of Medical Examiners of the State, ex-President of the Councillors of the State Society, besides is one of the best known surgeons in the eastern part of the State. The hospital under his management certainly ought to succeed.

SANITARY CONDITION OF OUR SLEEPING CARS.

Recently this subject has attracted the attention of a great many people who are interested in sanitation. It is generally believed, possibly admitted by everyone, that the use of these cars is attended with

some risk, and that changes are necessary and should be made.

It is well known that consumptives traveling to and from health resorts in every part of the country, patronize these cars more than any other class of people. Only a small per cent. of them realize their danger, or their danger to their friends and to other people. They do not know that their sputum, when not properly disposed of, often endangers the lives of their friends and attendants and other innocent people. They are likely during the night, while in these cars, to spit upon the carpet, or on cloths, or on handkerchiefs and deposit the same behind their pillow or on the window-sill, or some other place for it to dry. Its flakes and its scales blow about and lodge in every nook and corner of the car, especially its furnishings and bedding. This is often the condition of cars that have to be occupied by strangers, who are innocent as to the dangers that surround them.

Arrangements of this kind, even to those who are the most indifferent, must appear unsanitary. The cars ought to be constructed so that they can be thoroughly disinfected. Passengers known to have tuberculosis should not be allowed, unless accompanied by an intelligent and careful attendant, to patronize our sleeping apartments. We have no desire to suggest rules to sleeping car companies, that we are not willing to create and enforce in our own homes. If a member of our family has pulmonary tuberculosis, we try to protect ourselves against the danger of contracting the disease from them.

A Card—To the Medical Profession of the State.

In the "Principles of Medical Ethics," promulgated by the American Medical Association and adopted by the Medical Society of the State of North Carolina, it is specifically set forth, that "it is incompatible with honorable standing in the profession, to resort to public advertisements or private cards inviting the attention of persons affected with particular diseases; to promise radical cures; to publish cases of operations in the daily prints, or to suffer such publications to be made; or to employ any of the other methods of charlatans."

In both of the Raleigh morning papers of September 14th, there appeared an account of the X-ray location of a bullet in the body of a wounded man and of the operation for its removal, in which our names were used in a way calculated to do us a grave injustice and to put us in a false position in the eyes of the profession, whose esteem and good opinion we value too highly to let the matter stand as it is.

The publication was made in such circumstantial details as to justify the conclusion, that we had both furnished the same and inspired their publication. If we had really done so, we would have committed, thereby, a gross breach of professional ethics and rendered ourselves liable to the just censure of the profession.

We did not inspire the said publication, nor authorize the use of our names in connection therewith. On the contrary, one of us, when approached by a reporter, specifically requested him not to mention our names in the premises.

Under the circumstances stated above, we feel that it is due to ourselves, and to the profession at large, to make this public disclaimer and to state the following facts, to-wit: One of our medical students, Mr. M. R. Farrar, thinking to do us a kindness, gave the account to the reporters, substantially as published, except that he did not emphasize his own prominence as the newspapers did. It is only just to Mr. Farrar to say that, being an undergraduate, his attention had not yet been called to the unethical aspect of such publications, as viewed by medical men.

We are confident that those who know us well will need no disclaimer from us; but to those physicians who know us but slightly, or not at all, we feel that we owe the statement given above.

A. W. GOODWIN.

A. W. KNOX.

Review of Southern Medical Literature

Maryland Journal, August 19, 1904.

The Life Tragedy of John Addington Symonds.—George M. Gould, M. D.

Typhoid Orchitis.—Samuel T. Darling, M. D., reports a case of this rare complication of typhoid fever, only sixty-six cases having been recorded. This complication occurs most frequently during convalescence, but has been known to develop on the tenth day and as late as the sixth week. It may be limited to the epididymus, or more commonly the gland alone may be involved. In 50 per cent. of the cases, both testicle and epididymus were involved, the disease was unilateral with effusion into the tunica vaginalis in 12% of the cases. Suppuration occurred in 25% of the cases. The bacillus typhosis has been obtained from the glands in six cases.

American Practitioner and News, August, 1904.

A Case of Abscess of the Brain Following Acute Suppurative Otitis Media With Remarks.—Isaac Lederman, A.B., M. D., describes the case of a young man 19

years old, who contracted measles in February, during which abscess of the middle ear developed, for which complete mastoidectomy was successfully performed March 26th, the patient leaving the hospital April 15th. The suppuration continued intermittently. On June 12th he had a temperature of 103 degrees, pulse 100. On June 16th a further operation was performed, curetting away granulations leading from the antrum to the tympanic cavity. On the 29th his mentality was clouded but there was no aphasic or paralytic symptoms, a diagnosis of cerebral abscess was made but patient's family refused further operation. Two days later the patient had a convulsion followed by coma and death. Dr. Lederman reviews the literature and symptoms, pointing out the operation for brain abscess, the result of otitis media, is indicated and that the mortality is low, McEwen having only had one death in 19 operations.

Virginia Medical Semi-Monthly, August 12, 1904.

Appendicitis.—John T. Graham, M. D., reports several cases of appendicitis, strongly urging early operation.

Complications and Sequelae of Parotitis.—D. L. Kingsolver, M. D., reports cases of nephritis preceding orchitis and ovariitis as complications of parotitis. In the first case he gave nux vomica, infusion of digitalis and acetate of potash, applying a clay poultice. In the second place he washed out the uterus with bi-chloride and gave strychnia, quinia and brandy.

Chloroform Anesthesia.—A. Jacoby, A. B., M. D., gives detailed directions as to the administration of chloroform. He considers either the safer of the two anesthetics, especially for the general practitioner.

Position of the Kidney After Nephropexy.—Augustine H. Goelet, M. D., considers that the restoration of the prolapsed kidney is essential to normal action, as displacement interferes with its circulation and function. He does not consider that the abnormal mobility of the organ is the sole cause of the symptoms. He claims that in the downward displacement there is inflammation, and points out that fixation of the kidney lower than normal is of no avail. Incidentally he strongly opposes the splitting or peeling of the fibrous capsule of the kidney as both unnecessary and unwise.

Texas Medical Journal, August, 1904.

The Medical Profession—A Contributory Factor to the Death Rate of Consumptives.—C. H. Wilkinson, M. D., considers that physicians are to blame for not in-

forming the patient at once of their disease, and insisting upon their seeking suitable climate and proper treatment. He seems to overlook the fact that a large proportion of tubercular cases are not in a position to leave business.

Nashville Journal of Medicine and Surgery, June, 1904.

The Management of Occipito-Posterior Positions of the Vertex.—James D. Voorhees, M. D., gives a detailed account of the management of this presentation with the statistics of its frequency.

The Old Dominion Journal of Medicine and Surgery, August, 1904.

The Treatment of Prostatic Hypertrophy.—Louis C. Bosher, M. D., advises that the patient be kept free from every source of irritation, physical, mental, sexual and alcoholic, as well as from exposure and fatigue. The diet should be light with a minimum of meat; acid fruits, strawberries, asparagus, tomatoes, and grape juice are injurious. Whiskey and gin may be given if a stimulant is necessary. Laxatives with plenty of water should be administered and urotropin and salol may do some good. Catheterization when necessary must be conducted under strict aseptic conditions. Cystitis complicating prostatic hypertrophy must be healed by irrigation of the bladder with silver nitrate, protazol or potassium permanganate. He recommends a palliative superpubic or pereneal cystostomy for drainage, the Bottini operation and a superpubic or pereneal prosectomy. Iliac ligation, castration, vasectomy, angio-neurectomy and similar methods are condemned.

The Prevention of Tuberculosis.—Henry Wiseman Cook, M. D., states that the yearly cost of the deaths and invalidism from tuberculosis is \$72,000,000 for Canada; \$9,000,000,000 for the United States, and \$12,000,000 for the State of Virginia. He advises education of the people by means of the newspapers, greater cleanliness in the streets and public buildings, railroad carriages, etc., provision for the tuberculous poor, a free dispensary for poor tuberculous patients where all cases should be reported by the physicians; a hospital for pauper consumptives and a farm or sanitarium in the country for early cases.

Some Remarks on the Diagnosis of Typhoid Fever.—Greer Baughman, M. D., considers the following points of importance in the early diagnosis of typhoid fever: History of malaise, anorexia, chance of infection, headache, etc., temperature

curve, pulse rate which is out of proportion to the height of the fever, tympanites gurgling in right iliac, rose spots, widal reaction, normal leucocytes, heightened mononuclear and lessened polynuclear count, diazo-reaction, isolation of bacilli from feces, from blood and from rose spots.

Southern Medicine and Surgery, August, 1904.

The Treatment of Prostatic Hypertrophy.—Louis C. Boshier, M. D.

The Medicinal Treatment of Pneumonia.—E. G. Wood, M. D., in reviewing the subject concludes that no drug should be prescribed unless there is a clear indication for its use, and no cardiac depressant should be given at any stage of the disease. He has found no advantage from the use of creosote, collaloy and turpentine. He condemns the coal tar drugs, pilocarpin, aconite, veratrum viride. For the pain he gives morphine, also for the cough and insomnia, for the heart failure he advises alcohol, strychnia, and in certain cases nitroglycerine and digitalis. He emphasizes the futility of over-drugging.

A Case of Acute Yellow Atrophy of the Liver Complicating Appendicitis.—Lewis C. Boshier, M. D., reports a case of appendicitis which developed jaundice three days after operation. Her temperature rising on the fifth day to 105.8-10, the patient dying in convulsions. At autopsy, yellow atrophy of the liver was found.

Virginia Medical Semi-Monthly, August 26, 1904.

Adenoids and Enlarged Tonsils—Joseph A. White, A. M., M. D., points out that the permanence of the pharyngeal tonsil in children from 3 to 10 years of age in constipation, stomacic disturbances or catarrhal conditions is sometimes mistaken for adenoids. He considers that in sluggish circulation there is a tendency to engorgement and infiltration of normal lymph tissue in the vaso-pharyngeal space, which by recurrence, produces chronic hypertrophy, sometimes in separate soft masses and sometimes as a firm hyperplastic projection. Acute infectious diseases, climatic influences and hereditary, are also etiologic factors. As symptoms he emphasizes mouth breathing, thick voice, enunciation impaired, especially of the letters "M" and "N," more or less discharge from the post-nasal space into the pharynx with a constant tendency to clear the throat, epistaxis, enlargement of submaxillary glands and sometimes asthmatic attacks at night. The facial expression is the same as in nasal ob-

struction. Earache with mastoid complications are common. The diagnosis can be made with the post-nasal mirror or in young children by digital examination. Operation is the only remedy. Dr. White is of opinion that adenoids do not recur after removal.

State Medical Organizations and the American Medical Association.—Landon B. Edwards, M. D., reviews the question of membership of State Societies and points to the small percentage of doctors who are members of societies, criticizing the organization of the Virginia State Medical Association.

Smallpox Occurring During Pregnancy.—Llewellyn Eliot, A. M., M. D., recounts three cases of smallpox during pregnancy.

Arthritis Deformans With Report of Case.—Emmett F. Reese, M. D., describes a very severe case of arthritis deformans in which he used inunctions of cod liver oil which seemed to arrest the disease. He then operated on the ankylosed joints with almost complete success.

A Case of Acute Yellow Atrophy of Liver Complicating Appendicitis.—Lewis C. Boshier, M. D.

A Plea for the Use of Standard Whiskey.—Thomas R. Evans, M. D.

Hebb's Improved Clamp for Earle's Method of Operating for Hemorrhoids.—Samuel Earle, Jr., M. D., calls attention to improvements in the curve of the blades of his clamp forceps suggested by Dr. Arthur Hebb, his assistant. The curve is adapted to the curve of the anal margin and has a hook on the end for catching up the running suture. Dr. Hebb has also devised a pair of curved scissors adapted to the curve of the forceps.

American Practitioner and News, August 15, 1904.

General Suppurative Peritonitis of Streptococcus Origin With Recovery.—E. S. Allen, M. D., reports a severe case of streptococcus peritonitis in a male which he saved by operation.

Mouth Breathing.—M. F. Coombs, A. M., M. D., LL.D., contends that the mouth should only be used for respiratory purposes in emergency and that parents should insist on children keeping their mouths closed, as mouth-breathing opens an avenue for throat and lung infection, besides being unsightly. The causes of mouth-breathing are adenoid vegetations in the nasal pharynx, relaxa-

tion or hypertrophy of the membrane covering the turbinated bodies. He also emphasizes the importance of parents correcting the mouth-breathing habit in children. As treatment he recommends operation to remove obstructions.

Book Notices.

Regional Minor Surgery. By George Gray Van Schaick, Consulting Surgeon to French Hospital, N. Y. Second Edition, enlarged and revised, 228 pages, Bound in Cloth, Profusely Illustrated. Price \$1.50. International Journal of Surgery Co., N. Y.

The practicability and usefulness of this book is best indicated by the demand, necessitating a second edition in an unusual short time. This edition has been subjected to a thorough revision and additional chapters have been added.

The author's object, to furnish the general practitioner with such practical information on Minor Surgical Conditions as will be of the greatest service to him in his daily practice, has been well accomplished. Subjects of a technical character have been avoided, and only the most applicable methods demonstrated by twenty years private and hospital experience are presented. The book is liberally illustrated with original sketches and is so eminently practical and useful, we believe it will be run through many more editions.

Magee & Johnson's Epitome of Surgery.

A Manual for Students and Practitioners. By M. D'Arcy Magee, A.M., M.D., Demonstrator of Surgery and Lecturer on Minor Surgery; and Wallace Johnson, Ph.D., M.D., Demonstrator of Pathology and Bacteriology in Georgetown University Medical School, Washington, D. C. In one 12mo volume of 295 pages, with 129 engravings. Cloth, \$1.00, net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1904.

The authors and editor have made an earnest endeavor to furnish an authoritative, clear, compact presentation of the essentials of modern Surgery. While this little volume is by no means intended to take the place of a text-book, it will be found convenient for study many times when a large book is inaccessible, while for students' use in quizzing themselves or each other, in preparation for college or State Board examinations, it will be of the utmost service. As with the other volumes of this excellent and very popular series, the questions are not interspersed with the text, but follow each chapter, thus per-

mitting consecutive reading without interruption.

Simon's Physiological Chemistry. A Text-Book of Physiological Chemistry. For Students and Practitioners of Medicine. By Charles E. Simon, M. D., late Resident Physician, Johns Hopkins Hospital; author of Simon's Clinical Diagnosis, etc. New (2d) edition. Revised and enlarged. Octavo, 500 pages. Cloth, \$3.25 net. Lea Brothers & Co., Publishers, Philadelphia and New York.

Dr. Simon has here treated Physiological Chemistry in a manner adapting his work to the wants of the medical student, and of the physician who has previously been unable to devote to the subject the attention which it merits. It deals with foods, their origin, classes and decomposition products, their digestion, resorption and excretion, the chemistry of the tissues and organs of the body, the substances resulting from their activity and their relation to physiological function. The early call for a new edition has enabled the author to include the results of the very active research in this field to date. The chapters on the Albumins, Nitrogenous Katabolism and Gastric and Tryptic Digestion have been rewritten. To render the work still more useful both to students and teachers, laboratory exercises have been added. The methods have been described in such detail that the student should find no difficulty in performing the experiments.

A Hand-Book of Surgery. For Students and Practitioners. By Frederic R. Griffith, M. D., Surgeon to the Bellevue Dispensary, New York City; Assistant Surgeon at the New York Polyclinic School and Hospital. 12mo volume of 579 pages, containing 417 illustrations. Philadelphia, New York, London: W. B. Saunders & Co., 1904. Flexible leather, \$2.00, net.

Dr. Griffith has given us a little work of great merit. It is a brief outline of the principles and practice of surgery, written as concisely as is possible with clearness. We are sure it will be valuable alike to the student and the practitioner, because the entire subject of surgery is covered, including all the specialties, as Diseases of the Eye, Ear, Nose and Throat; Genito-Urinary Diseases; Diseases of Women, etc. There are also articles on Life Insurance, Rape, Sexual Perversions, Microscopy, and on many other subjects of great importance to the practising surgeon. There are 417 illustrations, selected for their clearness, accuracy, and general usefulness. We predict that Dr. Griffith's work will be to

Surgery what Dr. Stevens' manual is to Medicine.

A Text-Book of Materia Medica: Including Laboratory Exercises in the Histologic and Chemic Examinations of Drugs. For Pharmaceutic and Medical Schools, and for Home Study. By Robert A. Hatcher, Ph. G., M. D., Instructor in Pharmacology in Cornell University Medical School of New York City; and Torald Sollmann, M. D., Assistant Professor in Pharmacology and Materia Medica in the Medical Department of the Western Reserve University of Cleveland. 12mo volume of about 400 pages, illustrated. Philadelphia, New York, London: W. B. Saunders & Co., 1904. Flexible leather, \$2.00, net.

Students of medicine, as well as pharmacy students, will undoubtedly welcome this work. The authors are teachers of much experience, and in this forelying book present a work on the subject of *Materia Medica* in an entirely new way, teaching by actual experimental demonstration. Part I comprises a guide to the study of crude drugs, both official and unofficial; while in Parts II and III the histologic and chemic examinations of drugs are considered in a scientific, yet clear and simple manner. All the histologic descriptions are supplemented by laboratory exercises of important drugs, so that the student becomes insensibly acquainted with their construction. Throughout the entire work general stress is laid on the recognition of adulterations. We can strongly recommend this work as reliable, practical, and excellent in every way.

Pathological Technique. A Practical Manual for Workers in Pathological Histology and Bacteriology, including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By F. B. Mallory, M. D., Associate Professor of Pathology, and J. H. Wright, M. D., Instructor in Pathology, Harvard University Medical School. Third Edition, revised and enlarged. Octavo, 469 pages, with 140 illustrations. Philadelphia, New York, London: W. B. Saunders & Co., 1904. Cloth, \$3 00, net.

The third edition of this successful work keeps pace with the great advances made in pathology, and its value as a laboratory and post-mortem guide remains undisputed.

In subjecting this book to thorough revision the authors have kept in view the needs of the laboratory worker, whether student, practitioner or pathologist, for a

practical manual of modern methods in the study of pathological material. Many parts have been rewritten, many new methods have been added, and the number of illustrations has been increased.

The Principles of Hygiene. A Practical Manual for Students, Physicians and Health Officers. By D. H. Bergey, A. M., M. D., Assistant Professor of Bacteriology, University of Pennsylvania. Second Edition, thoroughly revised. Handsome octavo volume of 536 pages, fully illustrated. Philadelphia, New York, London; W. B. Saunders & Co., 1904. Cloth, \$3.00, net.

Dr. Bergey's book has undergone a critical revision for this new second edition, and in its present form it now represents the practical advances made in the science of hygiene up to date.

This book is intended to meet the needs of students of medicine in the acquirement of a knowledge of those principles upon which modern hygienic practices are based, and to aid physicians and health officers in familiarizing themselves with the advances made in hygiene and sanitation in recent years. The book is based on the most recent discoveries, and represents the practical advances made in the science of hygiene up to date. The rapid strides made in our knowledge of the entire subject has rendered such a book, reflecting the more recent discoveries, a necessity to physicians and students of medicine.

A Text-Book of Diseases of Women. By Charles B. Penrose, M. D., Ph.D., formerly Professor of Gynecology in the University of Pennsylvania. Fifth Edition, thoroughly revised. Octavo volume of 539 pages, with 221 fine original illustrations. Philadelphia, New York, London: W. B. Saunders & Co., 1904. Cloth, \$3.75, net.

With astonishing regularity a new edition of this excellent text-book is called for, and it appears to be in as great favor with physicians as with students. Indeed, this book has taken its place as the ideal work for the general practitioner. The author presents the best teaching of modern gynecology, untrammelled by antiquated ideas and methods. In most instances only one plan of treatment is described.

The new edition has been carefully revised, much new matter has been added, and a number of new original illustrations have been introduced. In its revised form this volume continues to be an admirable exposition of modern gynecology.

Nagel's Epitome of Nervous and Mental Diseases. A Manual for Students and

Physicians. By Joseph Darwin Nagel, M. D., Consulting Physician to the French Hospital, New York. In one 12mo volume of 276 pages, with 46 illustrations. Cloth \$1.00, net. Lea Brothers & Co., Publishers, Philadelphia and New York.

In this age of rapid progress and evolution of new theories and sciences the student of medicine, who in four years is supposed to master the intricate and varied details of his chosen profession, and the busy practitioner, who must still spend a good part of his time in research and study to keep abreast with the rapid strides of advance, both feel the daily need of a text-book which will give them the essence of the subject which they are pursuing. It is with this idea that the author has undertaken to gather the various facts and data contained in the numerous text-books and pamphlets on the diseases of the mind and nervous system, and to weave them into a compact fabric easily studied by those who are in search of precise information.

There is not a single author or lecturer of high standing, whose teachings have not been incorporated in a condensed form into the pages of this volume.

Illustrations are used throughout the volume wherever the understanding can be better helped by the combination of text and pictures, and the price of the volume (\$1.00), based upon the certainty of a very wide usage, is low enough for every student's purse.

Davis' Obstetrics. New (2d) Edition. A Treatise on Obstetrics. For Students and Practitioners. By Edward P. Davis, A.M., M.D., Professor of Obstetrics in Jefferson Medical College; Professor of Obstetrics and Pediatrics in the Philadelphia Polyclinic, etc. New (2d) edition, thoroughly revised and much enlarged. Octavo, 800 pages, with 274 engravings and 39 full-page plates in colors and monochrome. Cloth, \$5.00, net; Leather \$6.00, net.

From a practical standpoint this work is all that could be desired. Dr. Davis has furnished a thoroughly scientific and brilliant treatise on Obstetrics. His method is original and comprehensive, and the scope of the work includes cognate subjects of great importance which are not met with in other books on the subject.

In preparing this new edition Professor Davis has subjected it to a complete re-writing throughout, resulting in an enlargement of about two hundred and fifty pages. Together with the established principles and practice of Obstetrics he has incorporated the latest additions to our knowl-

edge of the subject, which promise to be of permanent value. In its new form it accordingly represents the science and art of Obstetrics to the date of issue. The work has always been notable for the abundance and instructiveness of its illustrations. The series has been revised equally with the text, and any engravings or plates susceptible of improvement have been replaced.

Abstracts of the Leading Articles of the Month.

Acute Thyroidism.

Wells, in the *American Surgery and Gynecology*, describes a case of acute thyroidism following curettage as illustrative of the sympathetic relation existing between the thyroid in women and the pelvic organs. The patient, aged 53, curetted for relief of post-climacteric bleeding due to a chronic endometritis, had for many years had a slight enlargement of the right lobe of the thyroid, an excitable, rapid pulse, and a slight tremor, but no exophthalmia. Shortly after operation, the pulse became very rapid, the patient became flushed tremulous, nervous, voluble, with sweating, diarrhoea and vomiting. These symptoms of an extreme toxæmia continued with little variation for 24 days, the condition at times being such that death seemed imminent. The predominant symptom was rapid and weak heart action; when improvement began, until she reached a condition approximating that before the operation.

The thyroid was perceptibly enlarged, especially on the right side, and no treatment can be said to have had any influence upon the gradual amelioration of symptoms.

Death from the Bursting of a Tonsillar Abscess.

Alexander Lyons (*The London Lancet*): A man aged twenty-eight years, was admitted suffering from a very large suppurative tonsillitis on the left side. He was given a warm bath and put to bed, where he partook of a glass of milk. About half an hour afterwards, the nurse in charge of the ward heard him coughing feebly, and, on going to ascertain the cause, was surprised to find him cyanosed, and the patient was dead in five or six minutes.

At the post-mortem examination, it was found that the abscess had burst, and that a large amount of pus had got into the upper part of the larynx.

The Hypodermic Use of Camphor.

Johnson (*Pennsylvania Medical Journal*) states that camphor is considered an antispasmodic, but it has a more important action as a cardiac stimulant; it is of quite as much if not more value than strychnine. In addition to its stimulating properties it

is a cerebral sedative. It is especially valuable in infectious conditions where there is mild delirium associated with failure of the circulation. Camphor for hypodermic use should be dissolved in olive oil in the proportion of ten minims to two grains of camphor. The dose is from two to six grains. A solution of this strength will readily give the maximum dose in the quantity contained in an ordinary hypodermic syringe. The author often gives from 24 to 36 grains of camphor for several consecutive days. If the olive oil is aseptic, there is no danger of abscess. Under its use complicated low cases of typhoid fever often take on a favorable aspect.

Surgery of Urinary Tuberculosis in Women.

The author refers to his recent paper published in the *Johns Hopkins Bulletin*, in which is given a brief summary of the histories of the 35 cases of urinary tuberculosis occurring in the service of Dr. Howard A. Kelly and his associates in Baltimore. The present paper deals briefly with the etiology and pathology, devotes considerable space to the symptoms and diagnosis, and is concerned chiefly with the treatment of tuberculosis of the urinary system.

The average age of the patient at the time of onset of symptom was 28 years.

Several patients had foci of disease elsewhere, evidence of tuberculosis being present in the glands, joints, pelvic organs or lungs.

The operation was on the right side in 17 cases and on the left in 18 cases.

The author considers that nearly all cases of urinary tuberculosis in women are primary in the kidney. Of 31 cases examined with the cystoscope, 13 had normal bladders, while in 18 the bladder was diseased. In probably not more than 11 cases was the bladder tissue tuberculous.

Tuberculosis of the kidney may be the primary focus of tuberculosis in the body.

Symptoms of the disease may be entirely wanting or they may come on very late in the course of the disease. In 17 of the cases, the first symptoms were referred to the bladder. Eleven patients complained at first simply of discomfort in the kidney region, while five patients gave a history of acute onset with renal colic accompanied by nausea, vomiting, chills and fever. Pain in the course of the ureter is not uncommon.

Bladder symptoms were present at some time during the course of the disease in 31 out of 34 cases. In three of the cases the local symptoms had been entirely confined

to the bladder. Pain is often referred to the urethra or to its external orifice.

Hematuria is probably present at some stage of the disease in every case. Blood is easily overlooked in the ordinary routine urine examination because of the great number of leucocytes present.

Pus was present in every case. With blocking of the diseased ureter the urine may be temporarily clear. The quantity of albumen is generally not large. Casts are not common. The urine was acid in every case.

The results of bacteriological cultures were reported in nine cases, four of which were sterile, four containing a colon bacillus growth, and one a growth of streptococcus.

Tubercle bacilli should be found in practically every case. Of 22 cases in which a note is made as to search for tubercle bacilli, 15 yielded positive results. In one other case bacilli were not found but inoculation of guinea pigs with urine from the affected side resulted in death of the animal from tuberculosis. The differential stain should always be used, because catheterizing urine from the bladder does not exclude smegma bacilli. The author cites a case to demonstrate this fact.

The tuberculin reaction is generally not necessary in making a diagnosis but at times it is found a valuable adjunct.

One of the most valuable means of diagnosis is found in the cystoscope. The author does not believe in catheterizing a supposedly healthy kidney through a diseased bladder, catheterization of the diseased kidney and simultaneous collection of urine from the opposite side through the bladder being sufficient. If one fails to catheterize the diseased ureter, a preliminary incision may be made for investigation of the supposedly healthy kidney.

The absence of tumor formation is not of diagnostic importance. Of 26 cases in which a note is made, there was a visible or a large palpable tumor in six. In 10 others the kidney was said to be enlarged. In five the kidney was palpable but of normal or diminished size, and in five the kidney was not palpable.

A note on palpation of the ureters is made in 19 cases. The ureter can generally be palpated as it crosses the pelvic brim, and in the pelvic portion it may be palpated through the vagina and particularly through the rectum. Palpation of the kidney often causes pain and a desire to void urine. These symptoms are more frequently elicited on palpation of the ureter. The base of the bladder may be thickened and tender and its palpation may cause referred pain in the urethra.

The treatment of all of these cases was operative. Nephrotomy with drainage was the only operation in three of the cases. Two of these had evident involvement of the opposite kidney and died from this cause, one within 11 weeks and one after two years. The third case improved rapidly during six weeks in the hospital. She is the only patient of the series who has not been heard from since the operation.

In nine cases nephrectomy was done. Eight of these patients are living, one having died six weeks after operation with evident involvement of the opposite kidney. Nephrectomy and partial ureterectomy was done in seven cases, all of which are living.

Nephro-ureterectomy was the operation in 13 cases, all of which are living. The complete removal of kidney and ureter is now done through two short incisions. The kidney incision begins in the angle formed by the erector spinæ muscle and the twelfth rib and is carried downward and forward about parallel with the rib, being from 8 to 12 cm. in length according to the size of the kidney. In very adherent cases the author resects the twelfth rib, thus gaining a more direct exposure of the kidney and its vessels. The ureter is loosened to the pelvic brim, and after removal of the kidney the lumbar wound is completely closed, or closed with slight drainage, and the patient is changed to the dorsal position for the removal of the ureter. The ureter incision is made about 4 to 5 cm. above Poupart's ligament and runs parallel to this structure, beginning about opposite the anterior superior spine of the ilium. The ureter is freed throughout its pelvic portion and cut off close to the bladder. At times it becomes necessary to tie and cut the ureter in its broad ligament portion as it dips under the uterine vessels.

Nephroureterectomy and partial cystectomy or resection of the diseased portion of the bladder, together with the ureter and kidney was done in three cases. Two of these died from the effect of the operation, and one is in perfect health. The author does not favor removal of a portion of the bladder at the primary operation for he has found that many cases of bladder ulceration are not specific and clear up after removal of the tuberculous kidney and ureter.

Of the 23 cases in which there was partial or complete ureterectomy the ureter was examined microscopically in 22, and of these 17 were tuberculous, while five showed chronic inflammation. An analysis of the series with reference to wound healing shows that a wound may close rapidly after the partial removal of a tuberculous ureter, or that it may suppurate for years

after the complete removal of a non-tuberculous ureter; but that as a rule the partial removal or the leaving of a tuberculous ureter is followed by months or years of suppuration, while the complete removal results in rapid closure of the wounds.

Summary of Results: One patient has not been heard from since leaving the hospital. Five patients, or 14 per cent. have died, two from the results of the operation and three from involvement of the other kidney. Two patients now living after respectively 8 and 14 years may have tuberculous infection of the remaining kidney.

Eleven patients still have bladder symptoms or are known to have a bladder lesion. The time elapsed since operation in these cases has been: 14 years in one case, five years in two cases; four years, one case; two years, two cases; from 18 months to six months, five cases. All but one of these patients are in good general health, five of them reporting better health than they have known for years.

One patient, after three years, still has partial incontinence of urine due to treatment of the urethra before she was admitted to the sanatorium.

Two patients on dismissal six months ago had colon bacillus infection of the remaining kidney but they had very little pus in the urine, no symptoms, and considered themselves well. One of these was seen recently, she had gained 30 pounds in weight, the bladder was normal, but the colon bacillus infection was still present.

Two patients are reported or known to be in perfect health. The time elapsed since operation has been: eight years, one case; six years, two cases; five years, one case; three years, two cases; two years, two cases; one year, one case; six months, one case.

One case was operated on for pelvic and abdominal tuberculosis in June, 1902, six years after her kidney operation. She now has fair health and is pursuing field work in botany.

This gives us 25 out of the 35 cases, or 70 per cent. to be classified as enjoying either fairly good or excellent health.

Two cases are in poor health, each after five years with evidence of chronic interstitial nephritis. Two cases have lung tuberculosis but they are both leading normal lives as housekeepers.

Poisoned Wounds by the Implements of Warfare.

L. A. La Garde, in the *Journal of the Association of Military Surgeons*, discusses this subject very clearly. He says the literature of poisoned wounds gives ample evidence that the poisoning of projectiles has been practiced from prehistoric

times to the present day. It is also evident that not only vegetable but also bacterial poisons have been employed. The introduction of firearms about the fourteenth century, however, threw much doubt on the possibility of continuing the practice of the ancients. His observations show now that the explosive and the ball are contaminated in 12 and 47 per cent, respectively, of the specimens examined, and also that they become contaminated by handling. The wad and wadding are always contaminated. Moreover, the heat generated during firing does not destroy bacteria existing in the powder, or the wad, or on the ball or the barrel of the gun, and bacteria placed anywhere in black or smokeless powder, or in the barrel, can invariably be recovered from media into which the missile is discharged. Thus it has been demonstrated for bacillus anthracis, when placed either on the bullet or in the powder (smokeless or black). Also the experiments proved that tetanus can be conveyed into an animal when the bacillus is placed anywhere from the powder to the point of impact on the skin.

An infected wound, however, need not necessarily come from an infected missile, as the latter may become infected *en route*, as from penetrating infected clothing. The character of the lesion, so far as it relates to the local resistance, is of prime importance. Hematomata in particular involve a special predisposition to infection, and as gunshot wounds often partake of the nature of a hematoma (in addition to lacerations and other injuries leading to necrosis), such wounds must be regarded as at least as liable to infection as hematomata; and Strick's experiments show them to be even more so.

Concerning vegetable poisons, such as curare and ricin, there is nothing in the act of firing to destroy their lethal properties, and they are readily conveyed when placed on the ball or barrel, or in the powder, and undoubtedly toxins and animal poisons, such as snake venom, could be conveyed in the same manner. With vegetable poisons the experiments showed that clean incised wounds absorbed the poison more rapidly than other wounds, and that death was more rapid. Respecting poisoned wounds as they actually occur to-day, taking tetanus as an example, its occurrence is very frequent both in civil and military life, as a result even of toy-pistol and blank-cartridge wounds. He points out the medico-legal aspects of the subject and the possibility of intentional infections of projectiles. In suspected criminal attempts, the surgeon should make a thorough examination of the ammunition and weapon, including a chemical and bacteriological examination of the powder, bullet and barrel; powder

grains found in the clothing or wound should be carefully collected; the projectile when recovered should be dropped into media, with sterile forceps; the inside of the barrel should be examined for specific microorganisms; and a thorough study made of all the ammunition remaining in the weapon. If the shot was a ricochet, the initial point of impact should also be examined for the presence of poison. The same measures should be taken in the examinations for toxins and animal and vegetable poisons. Concerning the method of identification in these cases, Welsh says: "The only certain means of detecting toxins of the class of diphtheria or tetanus toxin, snake venom, and certain vegetable poisons of the same category, is their neutralization by the corresponding antitoxic sera. Occasion may arise when such detection is of practical and even medico-legal importance, as has been exemplified in India, where the criminal use of cobra venom is not unknown." When the evidence of poisoning has been shown, the prosecution should endeavor to establish the poison found: (1) On the instruments; (2) the dressings; (3) the hands of the attendants; (4) the clothing, and (5) the skin of the patient. This part of the evidence can be readily gathered if the surgeon in charge is on the alert and acts at once. In all the examinations for bacteria special attention should be paid to the identification of strict anaerobes by animal experimentation as well as by culture methods.

Pathological Action of Roentgen Rays.

McLeod, in "*British Jour. Derm.*," says:

(a) That the X-rays in small doses have a stimulating effect on the elements of the healthy skin.

(b) That large doses, by long exposures, close proximity of the tube to the skin, or the employment of soft tubes, the rays are capable of devitalizing the tissue elements, interfering with the process of reproduction and causing their degeneration; and that this power is the result of a direct specific action of the rays.

(c) That the more highly differentiated structures, such as the hair follicles, glands, nails and blood vessels, are more readily and severely affected by the rays than the less differentiated epidermal cells on the fibrous stroma of the cranium.

(d) That pathologically altered cells, whether of epiblastic or mesoblastic origin, are far less resistant to the rays than healthy cells, and are devitalized with small doses of the rays; and that this destructive action on diseased elements may be taking place while the healthy elements in the neighborhood, instead of having their vitality inhi-

bited, may be stimulated to a process of repair.

(e) That the action of the rays is cumulative, and that when the cellular degeneration reaches a certain degree the toxic products of the breaking down cells are capable of setting up an inflammatory reaction which is a secondary phenomenon.

(f) This inflammatory reaction is peculiar in that it occurs in a tissue the vitality of whose various elements has already been impaired by the action of the rays, and in that it is associated with greater destructive changes than those produced by the actinic rays and is apt to lead to ulceration and necrosis, and is liable to be followed by an imperfect process of repair.

The Transmission of Bovine Tuberculosis by Milk, with a Tabulation of Eighty-six Cases.

Cober, in the *American Journal of the Medical Sciences*, tabulates 86 cases of milk bovine tuberculosis, as well as additional cases showing transmission of bovine tuberculosis to man as the result of topical application of milk or of wound infection. He concludes his paper as follows:

(1) Tuberculosis may be transmitted to man in milk from tuberculous cows. The danger from this source is real and cannot be measured by the actual number of recorded cases, but should be judged in part, at least, by the inoculation and feeding experiments and the accidental wound infections which have established the intercommunicability of bovine and human tuberculosis.

(2) The degree of danger may also be estimated by the prevalence of bovine tuberculosis and of the forms other than phthisis pulmonalis in man, remembering that the infectious qualities of milk are greatest when the udder is the seat of lesions, and that Gebhardt's experiments have shown that tuberculous milk when diluted with the milk of sound animals in the proportion of 1:40 lost its infective power.

(3) The experimental studies also indicate that while the bacilli of human tuberculosis possess different degrees of pathogenic power and are often feeble virulence for cattle, Koch's assumption that human and bovine tuberculosis are distinct and that human tuberculosis cannot be conveyed to cattle appears to be disproved, and his failure to secure similar results may be attributed to the use of human bacilli of diminished virulence.

(4) Recent investigations have strengthened Smith's claim that there are two types of tubercle bacilli—the so-called bovine and human types, possessing certain morphological and biological differences; but it has also been shown that virulent cultures may

be obtained from both of these types, which when inoculated into animals produce the disease in question.

(5) Further research seems desirable with a view of determining the frequency of primary intestinal and abdominal tuberculosis in all cases which come to autopsy, whether the child perished from tuberculosis or not; and in these autopsies the bacteriological examination should be directed to the existence of the two types of tubercle bacilli originally referred to by Smith, and whether the bovine type predominates in the so-called scrofulous lesions.

(6) Careful chemical analyses of the milk of tuberculous animals should be made with a view of determining the amount of phosphoric acid as compared with the quantity in normal milk, since it appears probable from Dr. Schweinitz's biochemical researches that the excess noted by the older chemists is really the result of bacterial activity in the udder of the cow.

(7) In the meantime the pathologist has no occasion to reverse his opinion as to the identity of human and bovine tuberculosis, and the sanitarian has no reason to assume that the human subject is immune against infection with the bovine bacilli or is so slightly susceptible as to cause him to relax his efforts in preventive measures.

A Case of the Epiphenomena of Diphtheria Antitoxin.

Marsh (*American Journal of the Medical Sciences*) calls attention to the fact that joint stiffness, endocardial murmurs and atypical symptoms of rheumatism may develop in addition to the urticaria which not infrequently appears from seven to fourteen days after injection. He mentions the fact that occasionally the administration of antitoxin in diphtheria is followed by alarming symptoms.

He reports the case of a woman thirty-nine years old who was given 1,500 units on the fifth day after her throat became sore.

About ten minutes after receiving said injection the patient was taken suddenly with a feeling like sulphur fumes in the bronchial tubes, and could not breathe. She was said to have at once become very much cyanosed and semicomatose; her attendant thought that she was *in articulo mortis*. The patient said that at this time she felt a "numb" feeling extend over her body and that she could not see anything in the room. Next there developed a severe pain in the epigastric region, and the patient vomited, and immediately thereafter a severe itching, stinging rash came out all over the body. As the rash appeared the other symptoms passed away, and the whole

process had lasted up to this time about fifteen minutes.

He saw the patient within two hours and found a general urticaria with the conjunctivæ swollen and injected so as to prevent opening the lids. The patient had always noticed that the eyes would become suffused and that she would sneeze violently when driving behind, or close to, a horse; so that a special idiosyncrasy seemed to exist against contact with a horse or anything derived from that animal.

Complications of Diphtheria.

Boutin, in *Progressive Medicine*, March, has studied the gastro-intestinal disturbances which frequently precede the sudden death occurring during the convalescence from diphtheria. For five or six days after the onset of the angina, but often much later and in the midst of what appears to be a satisfactory convalescence, the patient develops anorexia, followed by vomiting, violent abdominal pain and either constipation or diarrhea. Soon the feeble and rapid pulse is followed by collapse and death.

The anorexia, which is especially profound, is a valuable sign of threatening danger, and should excite anxiety. Vomiting is also an important sign, and may be persistent. In general the danger is proportionate to the vomiting.

He also offers an explanation for the increased frequency of sudden death during convalescence, as well as the increase of post-diphtheritic paralysis since the general use of antitoxin. Formerly most of the severe cases died; now these lives are spared for the time necessary for these complications to manifest themselves.

On Wet Nursing and the Selection of a Wet Nurse.

W. Butler Walsh, in the *Inter. Medical Journal*, says, for any reason, a child cannot be nursed by its mother the choice must be made between wet nursing and artificial feeding. The chief real objection to a wet nurse is that the child may contract some disease from her. There is, per contra, the danger of the nurse contracting syphilis from the child. The nurse may be intemperate or vicious or irresponsible. She may, by her temper or habits, cause the child to have colic or diarrhea. A wet nurse should be healthy and strong, but not too fat; age twenty to thirty years. She should have good teeth, a clean, healthy skin and pharynx. It is of utmost importance that her child be healthy and free from any trace of syphilis. The evidence of the person present at the confinement should be had as to the healthiness of the placenta and child at birth. The nurse's breasts should be full and conical in shape, not too fat; they should contain plenty of milk and

become distinctly smaller when empty. The specific gravity should be 1.025 to 1.035, with fats three to four per cent. The age of the nurse's milk should be approximately that of the foster-child, better older than younger than the child. The real disadvantages of wet nursing must be minimized by scrupulous and conscious care in the selection of the nurse; the sentimental ones put up with for the sake of the child.

The Treatment of Neuralgia by Injections of Osmic Acid.

Wright, in the *Medical Chronicle*, says in regard to this plan of treatment:

It appears that Billroth and Neuber were the first to employ osmic acid for neuralgia. They used repeated injections by puncture through the skin without exposure of the nerve; as many as twenty injections were given in some cases. Eulenberg, employing a similar method, got good results in only three out of twelve cases, which included neuralgias of the brachial, sciatic, and trigeminal nerves.

Schapiro, who used a one-per-cent solution of osmic acid in glycerin and water, records five successes out of eight cases at periods two to six months after injection.

Jacoby claims eight cases of cure out of eighteen sciaticas, and warns us that it is "dangerous to implicate a motor nerve."

Frankel, of Hamburg, found experimentally in animals destruction of axis cylinders and degeneration of white substance with epineuritis and myositis as the result of his injections.

Cohen, of Philadelphia, used repeated injections, "without exposure," into the sciatic nerve, using as much as 30 minims of a one-per-cent solution.

Ellis records the occurrence of some irritation after injection into a thumb in which pain followed a strain.

Merces injected deeply and repeatedly into the sciatic region, with temporary relief and no ill effects.

Franck obtained three successes by direct injection, and Turner records a case of trigeminal neuralgia of two years' standing in which he injected the infraorbital, and after ten days relief followed, and lasted six months—i. e., to the date when the patient was last seen.

In November, 1899, Mr. (now Sir) William Bennett recorded eight cases of trigeminal neuralgia, one of painful stump, and one of painful median nerve after a wound. He exposed the terminals in the trigeminal cases and injected 1½-per-cent solution. His first case was in 1897, and his results range from 2½ years' duration downward. Delay in relief and slight relapses occurred in one or two, but his cases all showed good effects, and it is to his paper that the author

is indebted for his first acquaintance with the method.

It will be seen that most of the surgeons who have used osmic acid have injected it more or less at random without exposing the nerve trunk. Such a method is quite sufficient to account for irregular and defective results, and it is also remarkable that so little is said of any ill effects considering the very marked changes that osmic acid produces in the tissues, as shown experimentally by Frankel and observed by the writer in a case in which he repeated the injection, and on removal of a portion of muscle which had been attacked by the acid Dr. Charles Melland found marked degenerative myositis. In all his cases the writer has exposed the nerve and injected a 1½ or 2-per-cent watery solution into the trunk or its branches; sometimes the injection has been both toward the periphery and toward the center, and the acid has generally escaped more or less freely into the tissues immediately around the nerve.

Most of his cases are much too recent to attempt to draw any conclusions as to the permanent value of the method. It is further impossible to eliminate the effect of the exposure and the mechanical results of manipulation and puncture of the nerve, and in some cases of unintentional section by the trephine. It is clear, however, that if this method is employed the nerve should be fully exposed, and not merely a chance injection made through the skin. He believes that the immediate results in his cases, as regards both harmlessness and at least temporary relief, quite justify the use of the plan before resorting to any such severe procedure as excision of the Gasserian ganglion. In short, the author believes the method should have a further and extended trial. It will be seen that he has preferred to expose and inject the trunk in some cases rather than to deal with the terminals only, and this is a point that requires to be settled, since the severity of the one procedure is of course much greater than that of the other. It is also of importance to remember that delay in relief may occur—i. e., that pain may continue for some days or even longer after the injection and then pass off. So that it is not necessary to assume failure or to repeat the operation until time has been given to make sure that it is necessary.

Chronic Suppurative Otitis--Surgical Treatment.

White, in the *London Practitioner*, says that the simplest and safest treatment of chronic suppurative otitis consists of irrigation combined with "otectomy" in cases where obstruction exists. The tympanic

membrane should be cut out as completely as possible, especially in the case of children; with the membrane it is nearly always advisable to remove the malleus, and in some cases the incus. Granulations must be scraped out. Some authorities appear to regard granulations as a safeguard, but the author nearly always found them diseased in these cases, and finds a much surer safeguard in antiseptics. After the operation the ear is well irrigated with an antiseptic solution, and treated lightly with a dusting powder.

The operation gave rise to very little disturbance in the majority of the thirteen cases on which the author has operated, except temporary facial paresis, which occurred twice. There had been in most cases a remarkable absence of severe pain, especially in the cases that had previously undergone a course of irrigation. In several cases the operation gave great and immediate relief to pain. In no case was there any marked diminution in hearing, and in some the hearing was certainly improved. The operation renders possible efficient irrigation of the diseased cavities. The cases operated upon support the belief that chronic suppurative otitis is generally curable by treatment through the meatus, and that such cases should not be allowed, through neglect, to go from bad to worse, nor subjected unnecessarily to the severe ordeal of a so-called radical operation.

Operation for Puerperal Inversion of the Uterus.

Myer (American Gynecology) reports a case of *inversio uteri puerperalis* successfully reduced by a modified Kuestner's method. The patient had an instrumental delivery at term of a living child after having been in labor for twenty-four hours, not, however, having suffered any severe pains. The placenta was removed manually. There were profuse hemorrhages shortly after delivery and during the entire first week of the puerperium. These hemorrhages repeated themselves after the patient left her bed.

When Myer saw the patient she was extremely anemic and weak. The diagnosis of chronic inversion was easily made. The cervix was so tightly drawn around the inverted portion of the uterine body that re-inversion under anesthesia, even after the cul-de-sac had been opened, was impossible. Then an incision was made between two vulsellum forceps (placed in the posterior lip of the cervix) in the median line through the posterior lip of the cervix and the posterior wall of the uterus to the fundus, after which the uterus could be re-inverted by simply pressing on the anterior wall with the thumb. Closure of the incision and

the cut through the posterior vaginal vault, leaving a small gauze drain in the cul-de-sac. Duration of operation, twenty minutes. Uninterrupted recovery.

If manual replacement or reduction by means of the colpeurynter fails operation has to be resorted to. The vaginal operation is far superior to laparotomy. Hysterectomy is justifiable only as a last resort, being employed in a septic condition and when simpler methods have failed.

Notes on the Mercurial Treatment of Chronic Dysentery, Cholera and Liver Complaints.

Sen (Indian Medical Gazette, Calcutta, India) says:

Of all the remedies, calomel, in small doses, is very efficacious in cholera. The first sign of a favorable turn in cholera is the appearance of bile in the stools. This cholagogue property of calomel in cholera and dysentery cannot be owing to its being an indirect cholagogue, for in these diseases hardly any bile remains stored up in the liver, gall-bladder, or intestines. Moreover, the yellow bile which we see in choleraic and dysenteric stools at the time of convalescence is distinctly fresh. Dr. Rutherford's experiments on dogs show that calomel actually diminishes bile secretion, but the copious bile in the stools is the result of hurrying down of the already secreted bile owing to its stimulating action on the intestine. Clinically, in the treatment of cholera and dysentery, the author has noted the direct cholagogue effect of calomel. Dr. Rutherford's experiments show that calomel is an indirect cholagogue, and that calomel actually diminishes bile secretion. This experiment is true when we administer calomel in purgative doses, but the effect of minute doses of calomel on the liver is to increase actual secretion of bile.

There are many men who use calomel in large doses for the treatment of cholera. The author believes half a grain or a quarter-grain of calomel, or even less, often succeeds in giving cholera a favorable turn. The big doses of calomel produce salivation after convalescence. Everybody knows that at the evacuation stage of cholera hardly anything is absorbed from the gastrointestinal tract. Whatever is done by the administration, say, of ten grains of calomel, is achieved by a very small quantity which actually reaches the liver. The rest of the calomel, if not thrown out with the fecal matter, is sure to produce salivation. Very minute doses of calomel give a favorable turn to cholera by checking vomiting and bringing on secretion of bile and of other digestive fluids. The unutilized part of the big dose of calomel is absorbed in the con-

vallescent stage and makes the poor patient suffer from calomel poisoning. This direct cholagogue effect of calomel in small doses is a very important clinical phenomenon. It is high time that able men should work it out thoroughly and put down the result of experiments with minute doses of calomel.

Causation of Tuberculosis in Children.

Price-Jones, in the London Practitioner, divides tuberculosis, into pulmonary, alimentary, and general. Pulmonary tuberculosis includes disease of the air passages, lungs, and associated lymphatic glands. The bronchial glands being almost invariably involved; many authors believe that the infection must have been caused by the lymphatics from the tonsils and cervical glands, the mucous membrane of the oesophagus, the mesenteric glands, the thoracic duct, or the blood stream. He believes that the above propositions are untenable, and affirms that primary tuberculosis of the bronchial glands and all the other less simple varieties of pulmonary tuberculosis are caused by infected air conveyed by the respiratory channels, the infection being due to the human variety of the bacillus.

Alimentary tuberculosis caused by food and other swallowed substances which have been infected with tubercle bacilli of the human, bovine, or any other variety, is that form of the disease which involves those parts of the body included in the alimentary system. It includes a number of varieties which depend on the extent of the disease and its probable point of entry. With few exceptions they are all characterized by disease in the mesenteric glands.

General tuberculosis comprises all the possible combinations of the other two groups. It may arise from either of them or independently from both, by extension through the lymphatics, or by the blood stream.

The facilities for infection by the human bacillus tuberculosis are much greater than by any other variety. The analysis of a great mass of clinical material impresses the author with the fact that the source of this disease is probably the polluted air and not the food at all, unless this has been exposed to the tuberculous conditions of its surroundings. The tubercle bacillus is found in the dust of over-crowded rooms and arises from the expectoration and excretions of persons who suffer with tuberculosis. There are many varieties of the bacillus, some of which are noxious and others harmless for human beings; some are readily distinguishable, and others, like the avian and bovine varieties, are less easily differentiated. Until quite recently the bovine variety was supposed to be identical with the human bacillus.

A Fracture and Partial Dislocation in the Cervical Spine.

Primrose, in the *Canadian Practitioner and Review*, reports a case in which the anterior horn of gray matter and the pyramidal tracts of the spinal cord were involved by the injury, but the sensory paths almost wholly escaped damage. The symptoms in the case were such as to indicate that the injury had involved the anterior half of the spinal cord. The patient, 14 years of age, was standing under a shed when the roof fell, pinning him down his neck flexed forward. When released it was found that he had lost power in the right leg and both arms. The left leg was also weak, but he could use it a little and was able to stand upon it. He had no sensation in either arms or legs. Twenty minutes later sensation began to return, and shortly was restored all over the body with the exception of the right arm, which did not regain sensibility until forty-eight hours after the accident. Two or three days after the accident he was able to walk, but his legs were stiff and his steps were short. About this time he was able to move the arms. After the accident there was some swelling of the neck, and any attempt to move the neck caused pain. Five weeks after the accident he could walk, though with difficulty. He could make his way slowly for about two hundred yards. While doing so he would support his chin with his hand so as to take the weight off his neck. He was able to use the left arm well and the right arm fairly well. Shortly after this he began to grow gradually worse, and lost the use of both arms and legs. Eight weeks after the accident he was unable to stand, and the arms were completely paralyzed. Sensation was not affected. An operation was performed, the exact nature of which is not stated, but it was followed by an improvement in motion and sensation. Later these were lost again.

Syphilis of the Trachea and Bronchi.

D. Neumann, in the *Journal of Laryngology, Rhinology, and Otology*, says that specific disease of the trachea and bronchi has been observed as a symptom of late syphilis either along with gummata of the larynx or without any such tertiary symptom.

Gummata of the larynx tend to break down, and the cartilage becoming involved leads to necrosis, luxation, or fracture. The healing of these ulcerations brings about the formation of fibrous tissue bands and cicatricial protuberances of the mucous membrane, with resulting narrowing of the lumen. Serious dyspnea may afterward ensue, and with the bronchi also affected a

condition of tracheal bronchial stenosis may exist. Such a condition may rarely, it is true, be secondary—a packet of enlarged, hard lymph glands pressing on the trachea and bronchi.

Besides the danger of death being caused by suffocation, there is a case reported of fatal hemorrhage by the ulceration extending into a branch of the pulmonary artery, and a phlegmonous inflammation in the anterior mediastinum from ulceration at the lower end of the trachea has been observed.

Tracheotomy has in many cases been very unsatisfactory, but of fourteen cases collected together by Vierling, in each of which tracheotomy was performed, twelve died.

As yet laryngologists regard as somewhat uncertain operations for removing the cicatricial bands and connective tissue protuberances in the trachea or bronchi. Such operations are difficult because of their situation and because of the great tendency to an early recurrence of adhesions and new band formations, etc.

The Treatment of Syphilitic and Anemic Headache.

Hinshelwood, in the *Glasgow Medical Journal*, says that amongst the toxemic headaches we also class the syphilitic headaches. In all cases of chronic headache this is a possible cause which should never be lost sight of. More especially should we suspect syphilis if the headache has distinctly nocturnal exacerbations. Syphilitic headaches are often of a most persistent and chronic character, and may have existed for a very long time before their true character is suspected. This headache may be due to a variety of causes—periostitis of the cranium, meningitis, or intracranial gummata. All give rise to headaches, sometimes of a dull and sometimes of a very acute character, but most syphilitic headaches are worse at night, and this should always rouse our suspicion as to their true character.

He has seen many cases of headaches where the patients were sent to him with the idea that eye-strain was the cause, but where the distinctly nocturnal character of the headache directed his attention to the real cause, as was subsequently proved by their rapid disappearance under treatment. The physician is often misled by the absence of syphilitic history or syphilitic traces on the body of the patient. But syphilis is such a variable disease that the experienced observer attaches no importance whatever to the absence of syphilitic history, and this even when he is quite certain that the patient is telling him the truth. The primary lesion and usual secondary symptoms may have been so slight and trifling as to have escaped altogether

the notice of the patient, and yet he may suffer from later syphilitic manifestations in a most severe form. This cannot be too strongly insisted upon, that the absence of syphilitic history is of comparatively little moment in diagnosis. Should a patient suffer from chronic headache with distinctly nocturnal exacerbations, and for which no cause can be discovered, it is a very safe rule to put him on a short course of specific treatment. He usually prescribes 1-12 grain hydrarg. bichloride and 20 grains of potassium iodide thrice daily. If the headache be of syphilitic origin it will very soon be influenced by this treatment. There is nothing more striking than the rapid relief often given by this means to obstinate headaches, from which the patient has been suffering for a long time without their true character being suspected.

In order to perform its functions properly and without discomfort, the brain must not only be supplied with pure blood, but it must be sufficient in quantity as well as in quality. The brain has a very large vascular supply, and it has been estimated that it receives fully one-fifth of the blood in the human body, a fact which vividly bears witness to its immense and never-ceasing activity. If its functions are to be properly carried on it is absolutely essential that it should be freely supplied with the blood of proper quality.

Hence, in the various forms of anemia, where the blood-supply to the brain is defective both in quantity and quality, headache, generally frontal or vertical, is a very frequent symptom. These anemic headaches are often relieved by the recumbent posture, which insures a more abundant supply to the brain. Remedies such as phenacetine and antipyrin may give temporary relief, but cure of the headache will only be produced by the cure of the anemia, and sending a sufficient stream of rich blood to the brain. This anemic headache occurs both in the ordinary form of anemia, in which there is chiefly a deficiency of hemoglobin (as in chlorosis), and also in cases where the anemia is due to loss of blood. The pain is generally frontal or general, and in chlorosis it is often complained of as being peculiarly intense at the back of the eyes, the patient often describing the sensation as if the eyes were being dragged back into the head.

Obstruction of Large Bowel from Adhesions the Result of Chronic Constipation.

Lane, in the *London Lancet*, states that in many cases in which the symptoms have pointed to the right kidney and in which the kidney has been explored without the finding of any pathological lesions, the re-

lief of symptoms has been due to the extensive separation of the colon from the kidney. When fecal matter is allowed to accumulate in the intestinal tract the cecum, the ascending colon and the sigmoid flexure are likely to become inflamed from the irritation of the hardened masses. The cecum and ascending colon is the natural cesspool of the tract, as its contents must be forced directly upward into the transverse colon and as there is no obstruction to the passage of liquid from the ileum into the cecum. Owing to the inflammation, adhesions form between the ascending colon and the abdominal wall producing an abrupt kink of the bowel in the situation of the hepatic flexure and of the appendix. In many of these cases the symptoms are attributed to inflammation of the appendix, the removal of which does not relieve the symptoms. Thorough division of the adhesions will relieve many of these cases, but there is a certain percentage in which the operation gives but temporary relief. In these cases an anastomosis should be made between the ileum and the upper part on the rectum, thus sidetracking the entire large bowel.

Lip Reflex (Mouth Phenomenon) of New-Born Children.

The *Review of Neurology and Psychiatry* publishes two original articles which are worth notice. The first is entitled the Lip Reflex of New-born Children, and is written by Dr. John Thompson, of Edinburgh. The reflex is best elicited by a series of gentle taps on the upper lip, a little above the angle of the mouth, or on the under lip, a little below it. On tapping the upper lip in a well-marked case, there is often at first a slight momentary jerk; this generally towards the side tapped, but sometimes towards the other side. Almost at the same time the lips close, if they have been parted, and become deliberately pursed together, so as to pout a little. As the tapping is repeated, the protrusion of the mouth becomes more and more marked. Both upper and lower lips participate in the pouting. In some children, after repeated tapping, there are to and fro sucking movements of the tongue as well. When the lower lip is tapped, the resulting phenomena are the same.

This lip reflex seems to occur more or less distinctly in all healthy new-born babies when they are sound asleep, and in a considerable number when they are sleeping lightly, or are only drowsy. As the children grow older the reflex is less frequently found, and is only present when they are sound asleep. After the third or fourth year it is less common, and is less marked in character. Infants a few months old,

who are taking large doses of chloral for repeated convulsions, often show the lip reflex in a marked degree. When we consider that the act of sucking is the most fully developed voluntary co-ordinated act of which the newly-born child is capable, it is not surprising that the lips should be the seat of a special reflex at birth. It is evident that the lip reflex serves a very useful purpose in assisting the infant's first unpractised attempts at sucking, and by its means the mouth assumes a more convenient shape for receiving and retaining the nipple.

The Treatment of Gall-Stones.

I. Corsin (*British Medical Journal*) reports a case of typhoid fever with gall-stone colic as a complication. In this connection he discusses the treatment. He says: For the attack itself, if it is at all severe, morphine is practically the only effectual remedy, although good results have been obtained with dionin. In milder attacks hot fomentations, drinking hot water, chloroform (but if slight anesthesia, troublesome reflex is apt to occur, and deeper narcosis brings risks of its own; moreover, there is the danger of inducing violent vomiting), belladonna, which is supposed to paralyze the sphincter muscles near the ampulla of Vater, chloral, or antipyrin are occasionally useful. In the intervals between the attacks attempts at "dissolving" the calculi may be made, and probably the free drinking of warm alkaline waters, preferably at a spa (for example, Carlsbad, Gerez, Vichy, Marienbad, etc.), holds out the best prospect, not so much by virtue of rendering the bile alkaline, but more likely by diluting it, increasing the flow, and generally stimulating action. Salol and salophen are more useful than salicylic acid or the salicylates. Oleate of soda may be beneficial, and favorable reports have been given of a mixture of turpentine and sulphuric ether. In cases associated with constant pain and fever calomel has proved useful. Large doses of oil, (olive, cod-liver, and castor mixed) if tolerated may do good. When the stomach resents this treatment lipanin may be tried, or glycerin in Vichy water.

Syphilis As a Cause of Chorea.

L. Harrison Mettler, in the *Chicago Medical Recorder*, formulates his conclusions about as follows: (1) Syphilis, in rare instances, is a cause of chorea and it should always be thought of as a possibility during the examination of every case. (2) Chorea may be the result of acquired or hereditary syphilis. (3) Most of the cases of syphilitic chorea are unilateral, though they may be bilateral and generalized; belong to the pre or post hemiplegic

type of the disease; may or may not be associated with other signs of an irritative lesion; may not unfrequently be developed in hereditary syphilitics; and are to be attributed in all probability to a functional disturbance of an irritative sort in the cortical and ganglionic motor cells. (4) The existence and recognition of the two forms of syphilitic chorea, namely, the local and the diffuse, support the inference that all forms of chorea are but the expression of one or more of the multiplicity of possible factors which may disturb the functional activity of the upper motor neurones, these factors being all the way from a gross lesion down to a molecular or chemical change not demonstrable with our present means of investigation. This conclusion leads to the further conclusion that chorea is not a disease but a mere symptom. (5) Syphilis having finally been settled upon as the cause of any particular case of chorea, that case should be regarded and promptly treated as a case of syphilis and not as a case of chorea.

The Significance of Urinalysis in Pregnancy, with Special Reference to Eclampsia.

Willson (*American Journal of the Medical Sciences*) mentions the development of eclampsia and the value of urinalysis in the detection of this condition. He says in conclusion:

1. Careful urinalysis should be carried out in all cases of pregnancy at frequent intervals, and with increased frequency as term is approached.

2. The most dependable indications of impaired renal function and of probable eclampsia have been shown by general experience to be the presence of decided quantities of serum albumin, the diminution of the eliminated urea, and the presence of a microscopic renal sediment (casts, renal epithelium, blood, etc.). The character of the latter, when accompanied by the well known clinical signs of nephritis, always constitutes a working basis for an estimate of the probability of imminent danger.

3. Even if the urine appear perfectly normal the possibility of eclampsia must be considered, especially in young women. Eclampsia in such cases is of equal severity with that of cases in which the urine has given due warning of impaired renal functions.

4. When eclampsia supervenes upon labor in a subject with previously (apparently) healthy kidneys, the tendency subsequently is toward a return to normal renal functions if the patient survives. This circumstance would seem to indicate still more strongly that the kidneys may actually have been normal up to the time of a temporary

embarrassment and suspension of function.

5. Until the nature and ultimate cause of uremia and eclampsia are more thoroughly understood, it would appear that urinalysis, though not an unerring guide, is our most valuable index of the condition of the kidneys, and our most trustworthy source of information as to danger from such forms of toxemia.

6. The prognosis seems to be vastly improved if eclampsia be combated by generous bleeding, followed by venous transfusion with normal salt solution. These measures reduce and dilute the poison in the circulation, and relieve the cardiac distress. Free diaphoresis and purging are of course indicated.

Ulcer of Cornea.

Dr. Jos. E. Greenberg, New York City, reports the following case:

Young man, 19 years of age, was accidentally hit in the eye with a piece of iron, inflammation within twenty-four hours and has spread to surrounding tissue, infiltrating membrane of conjunctive and by sympathy extending to the other eye. Case had been under treatment for six weeks when the patient was told he must lose his right eye. I was then called in. The case looked hopeless; the eye and area around it, all the membranes and lids were a mass of inflammation covered with pus; so intense was the inflammation that the point of injury could not be found. Before deciding to operate, ordered the patient to bathe inflamed area every hour with a 10 per cent solution of Glyco-Thymoline and warm water, and to keep the eyes covered with a Glyco-Thymoline compress. The next day the inflammation was appreciably reduced, so much so that I could diagnose the case as a severe ulcer of the cornea. He continued with the Glyco-Thymoline washing; the pus formation was checked in twenty-four hours. Treatment was continued four days, when the bathing was reduced to every four hours.

In eleven days the young man was back at work, and in sixteen days, discharged as cured. The rapidity with which Glyco-Thymoline reduced the active inflammation was remarkable.

Sympathetic Ophthalmia.

Ramsey, (Annals of Oph) suggest enucleation under the following conditions:

1. Enucleate at once when the injury is so severe that the exciting eye is destroyed hopelessly from the beginning.

2. Enucleate at once on the slightest sign of sympathetic irritation should the vision of the exciting eye only equal a perception of light and darkness.

3. Enucleate at once if a foreign body is

present in, and cannot be removed from the exciting eye.

4. Enucleate at once when an injured eye is blind and suffering from recurrent attacks of acute inflammation, or when it is tender and irritable as a result of the onset of degenerative changes—e. g. ossification of the chorioid.

5. Do not enucleate when there is still sight in the injured eye, and when there is no sign of sympathetic disturbance in its fellow.

6. Do not enucleate when sympathetic inflammation is in progress and there is still sight in the injured eye, for under these circumstances the removal of the "exciter" will have no beneficial influence, and the probability is that in the end all the sight the patient will possess will be in the primarily injured eye.

Optico-ciliary neurotomy, simple evisceration, and, as suggested by Mules, evisceration and the implantation of a glass ball within the sclerotic, have all been proposed as substitutes for enucleation, but undoubtedly the last is the safest operation from the point of view of prophylaxis, and the increased cosmetical results claimed for the substitutes may be got after enucleation if the capsule of Tenon be filled with melted paraffin, over which the recti muscles and the conjunctiva are carefully sutured.

Experimental Fat Necrosis.

Welis (Journal of Medical Research) concludes an interesting article as follows: (1) Fat necrosis seems to be merely a special form, a necrosis of fat tissue, differing from simple necrosis chiefly in the sharp limitation of the affected area, usually by a wall of leucocytes and later by connective tissue, and the filling of the necrosed cells by the products of fat splitting. (2) It can be produced experimentally in some animals by intra-peritoneal injections of fresh hog pancreas, the results being the same whether the solutions are in weak alkalis or acids or in water. Fat necrosis produced in this way is the same in appearance as human fat necrosis. (3) The same results can be obtained by the use of ordinary commercial pancreatins. (4) The property of pancreatin survives heating for five minutes at a temperature between 65 and 71 deg. C. Above this temperature the property is entirely lost. These observations point to enzyme action as the source of the condition. (5) It has been impossible to ascertain which of the pancreatic enzymes causes fat necrosis. (6) Simple alkaline solutions of the strength of pancreatic juice, or slightly stronger, do not produce fat necrosis. (7) Many of the features of fat necrosis may be produced after death in animals, and also *in vitro*, with pancreatin; but the

resulting condition does not resemble fat necrosis at all closely. (9) Dissemination outside the abdominal cavity has been observed as early as 12 hours after intraperitoneal injection, the route of the dissemination being by the lymphatic system. (10) The forms of the foci produced seemed to depend simply upon the area exposed to the action of the pancreatin. (11) The earliest change in fat necrosis is a simple necrosis of the surface tissue, which extends gradually into the deeper fat cells. Fat splitting is subsequent to the necrosis and not its cause. At first the products are non-crystalline, but become so later. (12) The process progresses for but a few hours at any point, the extension seeming to be limited by surrounding leucocytes. Absorption of the area is accomplished by leucocytes, and healing is by proliferation of connective tissue from the margin. Adhesions are seldom formed. (13) The foci become visible to the naked eye in three to five hours. They may disappear within 11 days, or persist for a much longer time, depending chiefly upon their size. (14) Fat necrosis by itself is not dangerous to the affected animal, and may develop while the animal shows no observable symptoms.

The Prophylactic Use of Diphtheria Antitoxin in School Children.

Caille, in the *Archives of Pediatrics*, says: According to recent careful and unbiased investigations, the mortality in primary diphtheria has been reduced two-thirds, and the protective power of diphtheria antitoxin extends over a period of from three to six weeks or more. With an agent so powerful for good at our command, the question naturally arises: Do we or do we not make the best use of our new therapeutic acquisition?

It is not the intention of the writer to discuss the indications for the use of diphtheria antitoxin, but to suggest a new use for this agent by advocating an immunizing injection for young school children once or twice during the school year—for instance, in November and February—with the hope of preventing infection from primary diphtheria or croup; and, furthermore, with the hope of lessening the mortality of severe forms of scarlatina and measles, a large percentage of such cases being complicated by diphtheria from the beginning or in the course of the disease.

It is well known to the experienced medical practitioner that cases of scarlatina which show a complicating diphtheria from the onset are of a very grave type. In such cases we often observe an overwhelming sepsis with delirium and circulatory failure. In scarlatina with complicating diphtheria

setting in after the first week, the septic symptoms are never so acute and urgent.

In measles we have diphtheria as an early or late complication, but the most important diphtheria complication of measles is diphtheritic croup. The mortality from scarlet fever plus diphtheria, and measles plus diphtheria, is quite high, and the writer is of the opinion, based on clinical experience, that this mortality can be markedly reduced by means of protective inoculations of diphtheria antitoxin. Such prophylactic management will have no effect upon pure or simple scarlatina or measles, but will certainly create more or less immunity as regards grave diphtheritic complications; or, in other words, turn a grave disease into a milder disease.

For two years he has followed out this line of thought and has immunized a number of schoolchildren twice during the school year. No figures are given, for no one can tell what might or might not have happened. It may be stated, however, that not one of the children contracted primary or secondary diphtheria, and in no case was there the least unpleasant or unfavorable reaction after the protecting injection. The parents readily accepted the "protecting vaccination for diphtheria," and the writer has every confidence in the feasibility of this plan for communities in which diphtheria is endemic or epidemic.

The Clinical Study of Idiocy.

Pellizzi, (*Journal of Mental Pathology*) as a result of studies on the relation of clinical facts to anatomopathogenic findings, arrives at the following conclusions: (1) Given a case of congenital idiocy which becomes apparent during early infancy and which does not present any acute manifestations, it is impossible to make a positive diagnosis regarding the true origin of the affection on the basis of clinical facts. (2) The idea, introduced by Koenig and Freud, calling for the restriction, on clinical principles, of the limits of the so-called common idiocy (degenerative, genetic, evolutive, biopathic) is erroneous. (3) Neuropsychopathic heredity is generally found in cases of cerebroplegias. (4) The duration depends on the nature and the gravity of the lesions. The educability of these subjects also stands in relation to these conditions. (5) The dual forms of the idiocies as considered above must be taken broadly: It may be that developmental defects have their primary origin in pathological processes of the various cerebral zones; besides, the former may manifest themselves in a manner quite similar to that characteristic of pathological idiocies, as has been demonstrated in this paper.

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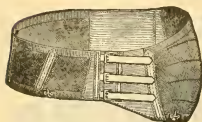
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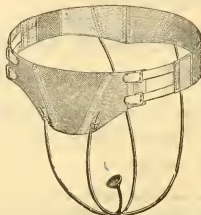


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Intra-Tracheal Injections in Treatment of Tuberculosis.

Mendel reports that fully half of 100 patients in various stages of tuberculosis were remarkably improved with intra-tracheal injections at 6 to 9 c. c. of eucalyptol in an oil vehicle. The technic is so simple that no special experience or skill is required, and the patients all submitted willingly to the injections.—*Exchange*.

Yellow Fever in Mexico.

Merida reports to the Superior Board of Health of Mexico five cases of yellow fever, and announces increased sanitary activity to prevent the spread of the disease. A yellow fever patient was found in the street in Tehauantepec and properly cared for.

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The Toxic Action of Urotropin, Following a Dose of Seven and One-half Grains.

Coleman reports in the Medical News a case in which a small amount acted in an untoward manner. The author says:

1. That the administration of urotropin may be, but only rarely, attended by toxic effects.

2. That the toxic actions (especially strangury) occur with comparative frequency if the urotropin is not properly diluted.

3. That the development of toxic effects is not always, or necessarily, correlative with the size of the dose of urotropin.

4. That individuals vary greatly in their susceptibility to the action of urotropin.

5. That urotropin has been known to produce the following toxic effects:

(a) Minor toxic actions: (1) Irritation of the stomach; (2) diarrhea and abdominal pain; (3) measles-like rash; (4) headache and ringing in the ears; (5) renal irritation, sometimes with albuminuria.

(b) Irritation of the bladder: (1) Strangury, the most common of the toxic effects; (2) irritant action on raw surfaces in the urinary passages.

(c) Hematuria and hemoglobinuria: Eight positive cases of hematuria, following the administration of urotropin, and one doubtful case, have been reported. In one case hemoglobinuria was associated with the hematuria.

6. That the more important of these toxic actions have been produced by intravenous injections of formaldehyde.

7. That the toxic actions of urotropin are due either (1) to special susceptibility to the action of formaldehyde, or (2) to interference with the usual disposition of formaldehyde in the body, or (3) to the liberation of an unusual quantity of formaldehyde.

8. That the toxic effects of urotropin generally disappear completely within a few days after withdrawal of the drug.

Mixed Tumors of the Salivary Glands.

F. C. Wood, in the Annals of Surgery, states (1) there is a group of extremely complicated tumors occurring in the facial region containing elements from both epiblast and mesoblast. (2) The complicated structure of the stroma, containing as it does embryonic tissue, cartilage, bone, fat, lymphoid tissue, and rarely muscle fibers, is explained most easily by the assumption of an embryonic misplacement of mesoblast. (3) Twenty-four per cent of the tumors examined showed undoubted presence of epithelioma—the form and relationship of the cells of the parenchyma did not furnish sufficient data to justify these cells being regarded as of endothelial origin. (4) The theory

of early embryonic displacement of epiblastic tissue during the formation of the parenchyma and submaxillary glands and the bronchial clefts may account for the peculiarity of the cells found. (5) The mixed tumors of the salivary glands run a clinical course strikingly different from sarcoma and carcinoma, in that they grow slowly and are generally benign. The region of lymph-nodes is not invaded, and recurrences are likely to remain local in a considerable portion of the cases.

The Treatment of Scarletina.

Philip Newcomb (St. Louis Courier of Medicine) thinks well of pilocarpin, which he has used in the treatment of the disease at the Bethesda hospital. The treatment is made to include various eliminative, antiseptic and tonic or supportive measures. An initial course of pilocarpin is given after the temperature has been reduced as much as possible by means of the cold bath or pack. He finds the remedy to be absolutely inefficient when given during a high temperature—the desired physiological effect being entirely lacking unless doses are given which are too large for safety. When however, the temperature has been brought down, prompt salivation and diaphoresis follow the exhibition of the drug and the effects may be augmented at this time by the use of the warm pack. Following this, salol or dilute sulphuric acid is given with quinin and the tincture of nux vomica. Fever is kept in check throughout by cold packs or sponge baths. An ointment composed of cold cream and tar ointment is used to allay the itching and for control of the desquamation.

Southern Illinois Medical Association.

M. D. Empson, President, Hartford; J. W. Armstrong, 1st Vice-President, Centralia; J. L. Wiggins, 2nd Vice-President, E. St. Louis; E. E. Fyke, Secretary, Centralia; C. W. Lillie, Assistant Secretary, E. St. Louis; A. T. Telford, Treasurer, Olney. Next meeting will be held in East St. Louis, November 3-4, 1904.

Number of Physicians in New York City.

The "Medical Directory of the City of New York," in the edition for 1904, just issued, contains the names of 5,909 practitioners in Greater New York. These are distributed as follows: Manhattan and The Bronx, 4,211; Brooklyn, 1,519; Queens, 121; Richmond, 58.

Dr. Walter Lindley, editor of the *Southern California Practitioner*, has recently been elected Dean of the Medical College of the University of Southern California. This Los Angeles school is now entering its twentieth session. Dr. Lindley was one of the organizers of the school, and is Professor of Gynecology in the institution.

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Empyemata in Children.

P. S. Blaker (*British Medical Journal*) has had eighty-one cases of empyema in children. He divides them into two groups: "acute," or "primary;" and "late," or "secondary," the latter comprising about 80 per cent. of all cases. Nearly all cases of empyema in children are associated with pneumonia, either lobar or lobular. An empyema due to initial disease of the pleura alone must be a very rare affection. An empyema almost always begins as such, and very seldom as a simple effusion. In the acute cases, the signs of fluid in the chest develop simultaneously with those of pneumonia, and the patient is very ill from the start. There are vomiting, marked dyspnoea, cyanosis, and high temperature. Signs of fluid are heard over the chest, and puncture with a needle brings away a thin purulent fluid. In such cases death practically always occurs when the patients are under two years old, from extensive consolidation of the lungs, meningitis, pericarditis, or peritonitis. As a rule, the fluid withdrawn from the chest is teeming with pneumococci. In the secondary cases, the prognosis of which is much better, there is no lung consolidation, and the patient has an empyema pure and simple. Pneumococci were found in 65 out of 69 cases. Tubercle is a very rare cause of empyema in children; it was found in 3 out of 23 autopsies. As stated before, the younger the patient, the less the

chances of recovery. A mixed infection, due to pneumococci and streptococci, is of bad omen.

All the cases were treated by opening the pleural cavity and draining it. Rib resection was done in 52 cases, and simple incision in 26. Of these latter 12 patients recovered and 14 died.

The after treatment is most important; the tube should be removed as soon as possible. After the second day it should be taken out daily, cleaned, boiled, shortened, and reinserted. When the discharge becomes thin and watery, the tube should be taken out altogether, being replaced by a thin gauze drain for a day or two. Aseptic dressings are preferable to antiseptic ones.

The Treatment of Puerperal Mastitis.

Boeckel, in the *Birmingham Medical Review*, says puerperal mastitis, when supuration has taken place, is usually treated by means of bold incisions into the inflamed area, that thorough drainage of the abscess and infiltrated tissues may be afforded. Such incisions are made to radiate from the nipple, which organ is naturally spared. The mastitis as a rule readily heals after this operation, and the function of the gland is not impaired to any material extent. The objection to this mode of treatment, however, is that the period of recovery is apt to be long and the scars left by the incisions to be very disfiguring, especially if situated in the upper part of the

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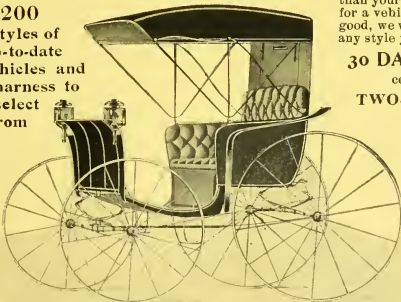
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breast. With a view of hastening the healing process, Boeckel suggested that after evacuation of the pus, the whole of the inflamed area should be excised by means of two elliptical incisions, and that afterwards the wound should be carefully closed by means of buried and superficial sutures.

This operation, however, is seldom likely to be resorted to, for unless the inflammation were very limited in extent it would involve too great a sacrifice of the gland tissue. A more valuable suggestion as to the best mode of dealing with such abscesses is the following: Its originator, Professor Bardenheuer, claiming for it that not only does it favor the rapid healing of the inflammation, but that it avoids the unsightly scars and damage to the milk-ducts, which in the customary operation are the great drawbacks. His method of treatment is as follows: A semi-circular incision is made at the periphery of the lower half of the breast, which is then dissected from the pectoralis major and turned up by sharp retractors, so that its posterior surface is exposed. The abscess is then opened from the posterior surface by free radiating incisions into each abscess cavity, a large drainage tube is inserted, and the breast replaced in its normal position. These drainage tubes running from above downwards, now project beneath the gland, and are most favorably placed for the free escape of the pus.

On account of this excellent drainage, the healing process is shortened, the operation scar is completely covered by the overhanging breast, and the large superficial milk-ducts remain uninjured. In the first few cases which Bardenheuer treated after this fashion, the recovery was somewhat delayed by the large operation wound being allowed to granulate, but in subsequent cases he partially closed his by sutures.

Bardenheuer believes that this operation is advisable when concerned with any large abscess situated in the breast tissue, whether superficial or deep. For sub-mammary supuration, a similar operation has long been in use; for removal of circumscribed innocent mammary tumors this method may often be adopted with advantage, and was advocated by G. Thomas in 1882.

Hour-Glass Stomach.

Moynihan, in the *British Medical Journal*, reports several cases. The symptoms and signs are:

1. If the stomach tube be passed and the stomach washed out with a known quantity of fluid, the loss of a certain quantity will be observed when the return fluid is measured. Thus, if 30 oz. be used, only 22 oz. can be made to return. Woelfler, who

called attention to this sign, said that some fluid seemed to disappear, "as though it had flowed through a large hole"—as, indeed, it has, in passing from the cardiac to pyloric pouch (Woelfler's "first sign").

2. If the stomach be washed out until the fluid returns clear, a sudden rush of foul, evil-smelling fluid may occur; or if the stomach be washed clean, the tube withdrawn and passed again in a few minutes, several ounces of dirty, offensive fluid may escape. The fluid has regurgitated through the connecting channel between the pyloric and cardiac pouches.

3. Paradoxical dilatation. If the stomach be palpated and a succussion splash obtained, the stomach tube passed, and the stomach apparently emptied, palpation will still elicit a distinct splashing sound. This is due to the fact that only the cardiac pouch is drained; the contents of the pyloric remained undisturbed and cause the splashing sound on palpation. For this phenomenon Jaworski has suggested the appropriate name of "paradoxical dilatation." Jaboulay has pointed out that if the cardiac loculus be filled with water, a splashing sound can still be obtained by palpation over the pyloric pouch. The sign of paradoxical dilatation is best elicited after washing out the stomach in the ordinary manner. When the abdomen is examined at the completion of the washing, and when the stomach has apparently drained quite dry, a splashing sound is readily obtained, for some of the fluid used has escaped into the pyloric pouch through the connecting channel.

4. Von Eiselberg observed in one of the cases that on distending the stomach a bulging of the left side of the epigastrium was produced; after a few moments this gradually subsided, and concomitantly there was a gradual filling up and bulging of the right side.

5. Von Eiselberg also called attention to the bubbling, forcing "sizzling" sound which can be heard when the stethoscope is applied over the stomach after distension with CO₂. If the two parts of a seidlitz powder are separately given and the stomach be normal or dilated, no loud sound is heard anywhere except at the pylorus; if a constriction is present in the stomach, a loud, forcible, gushing sound can be easily distinguished at a point 2 in. or 3 in. to the left of the middle line.

6. Moynihan first called attention, two years ago, to a sign which he has since found of great service in establishing a diagnosis of hour-glass stomach. The abdomen is carefully examined and the stomach resonance is percussed. A seidlitz powder, in two halves, is then administered.

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On percussing, after about twenty or thirty seconds, an enormous increase in the resonance of the upper part of the stomach can be found, while the lower part remains unaltered. If the pyloric pouch can be felt, or seen to be clearly demarcated, the diagnosis is inevitable, for the increase in resonance must be in a distended cardiac segment. If the abdomen be watched for a few minutes the pyloric pouch may sometimes be seen gradually to fill and become prominent.

7. Schmidt-Monard and Eichhorst have both seen a distinct sulcus between the two pouches inflated with CO₂.

8. Ewald has called attention to two signs which he considers of value in establishing a diagnosis. When the stomach is filled with water and examined by gastroduaphany, the transillumination is seen only in the cardiac pouch; the pyloric pouch remains dark.

9. The deglutible india rubber pouch of Turck and Hemmeter is passed and distended. The bulging caused thereby is limited to the cardiac pouch, which lies to the left of the middle line.

The two aids to diagnosis of greatest value are, it will be seen, the washing out of the stomach and its inflation with gas by

the administration of a seidlitz powder in two portions. The fluid used for the washing must be carefully measured before use; the tube is then passed and the stomach emptied, the contents set aside in a separate dish, and the washing commenced. All the fluid now returning is collected in a separate vessel and carefully measured. The two signs of Ewald are of little importance: a correct diagnosis can always be made without them.

The Symptomology of Dyspepsia.

Campanella, in the *British Med. Journal*, divides the symptoms of dyspepsia into three groups: (1) Chemical; for example, hyperchlorhydria and hypochlorhydria, achlorhydria and organic hyperacidity. (2) Neuromotor symptoms; for example, vomiting, pyrosis, cramps, tormina, atony and insufficiency. (3) Sensory; for example, gastralgia, hyperesthesia, anesthesia, nausea and anomalies of the appetite. In hyperchlorhydria, starchy foods are slowly digested, whilst albuminoids are rapidly consumed; hence, albuminoid diet eases these patients; whilst, on the other, it aggravates pyrosis and the gastralgia of fermentation. Gastralgia is usually aggravated by taking food, whereas in hyperchlorhydria food often gives temporary re-

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lief. Myalgia has to be differentiated from true gastralgia. Asthenic dyspepsia is essentially characterized by a sense of fullness and tension, with pains in the epigastrium and general torpor. Gastric distension tends to work upwards against the thorax, whilst in gastric dilatation the tendency is downwards. The specific characters of hyperchlorhydria are abundance of gastric juice, little mucus, few alimentary residues, no fermentation, appetite unimpaired, but pain and epigastric fullness. In gastrosuccorhea the gastric juice is increased in amount, there are frequent fermentations, polydipsia, hyperorexia, intense pain reaching its maximum intensity (in the shape of colic) at the end of digestion, dilatation, meteorism and hyperesthesia. In hyperchlorhydria or achlorhydria fermentations are excessive, the mouth is slimy, there is a bitter taste and foul breath, vomiting is severe, diarrhea or constipation, and the food is slightly digested or not at all. In organic hyperacidity the symptoms are very much like those of hyperchlorhydria, but the burning sensation and the pyrosis are more marked. Pain is spasmodic and often accompanied by vomiting. It is in this form of dyspepsia that examination of the gastric juice is most useful,

The Present Position of Ethyl Chlorid.

Luke, in the *London Lancet*, gives his views of the value of ethyl chlorid based upon an experience of over 400 cases:—(1) It is a pleasant anesthetic to inhale, extremely rapid in action, portable, and inexpensive. (2) It compares favorably with



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nitrous oxid as regards induction of anesthesia and available period; it produces no cyanosis when used in suitable doses and necessitates the carrying of no heavy and cumbersome impedimenta. (3) The technique of the administration is very simple. (4) While not as safe as nitrous oxid in the hands of the unskilled we are justified in concluding from the material available that it is safer than ether, all things considered, and much safer than chloroform or bromid of ethyl. (5) It can be safely readministered at one sitting, this being a further point in its favor over bromethyl. (6) It is not usually followed by marked after-effects. (7) It is preferable to nitrous oxid when the patient is very young, very old, or anemic; while those who are suffering from cardiac, renal, or lung affections take it quite well. (8) It is in no way to be preferred to chloroform or ether for *prolonged* anesthesia, but may be used with advantage merely to induce anesthesia which is maintained either with chloroform or ether. (9) For minor surgery, throat operations, and the extraction of teeth it is the best anesthetic available at the present time. (10) Pure ethyl chlorid, sold as such, is always preferable to proprietary preparations and to mixtures such as somnoform. (11) In conclusion, I think one of the strongest claims of ethyl chlorid to being considered a fairly safe anesthetic lies in the fact that during the past twelve months it has been experimented with wholesale throughout the country and yet no death has been recorded. It is quite possible that we may hear of deaths from time to time as the anesthetic becomes more widely used, often by quite unskilled and inexperienced persons; but that should not blind us to the real merits of the drug when used with reasonable precautions.

Gall-Stone Ileus.

Tupper (*Interstate Medical Journal*) describes a case of obstruction of the duodenum due to a large quantity of firmly impacted faceted gall-stones, ranging in size from a split pea to a filbert. Eighteen of the stones were removed through an incision in the anterior wall of the stomach, and quite a number of stones could be felt escaping into the duodenum as the impactation was broken up. The gall-bladder was empty, and firmly adherent to the mass containing the calculi. The inflamed gall-bladder had become adherent to the upper portion of the duodenum just beyond the pylorus, and ulceration occurred, forming a communication between the two cavities; thus liberated, the mass of gall-stones had encroached on the lumen of the intestine until complete occlusion took place. The patient made an uneventful recovery.

He concludes his paper as follows: (1) When intestinal obstruction occurs in patients who have had at any time acute inflammatory trouble in the region of the right hypochondrium, erratic gall-stones are to be considered as a probable factor in the production of obstruction. The probability is increased when the patient is a woman and past middle life. (2) The duodenum is the most frequent avenue of escape for calculi ulcerating from the gall-bladder. The colon is the next in order. The jejunum and the ileum are rarely perforated. Calculi entering the duodenum are generally carried further in the small intestine and arrested in their progress by the gradual diminution in the lumen of the bowel. (3) Gall-stones ulcerating into the colon rarely cause obstruction, being usually passed readily per rectum. (4) When gall-stones smaller than the lumen of the intestine cause obstruction it is probably because of the so-called decubital irritation and angulation described by Pilcher. (5) Frequently the site of the bowel obstruction can be located approximately by the study of certain symptoms, such as the presence or absence of meteorism and the presence or absence of bile in the feces or vomitus. (6) The lower portion of the small intestine is frequently the site of obstruction caused by lodgment of migrating gall-stones; obstruction of the duodenum below the entrance of the bile-duct is very rare, and obstruction between that point and the pylorus and most exceedingly rare, the author's case being the only one on record in which obstruction occurred at this level.

Acute Contagious Pemphigus of the Newly-Born.

George J. McGuire, in the *British Med. Jour. of Derm.*, records eighteen cases of this disease. All occurred in infants that had been attended by one midwife and after a very careful examination of all of the cases, he concludes as follows: 1. That this epidemic was one of the rare diseases known as Pemphigus Acutus Neonatorum. 2. That it was due to the infection of the staphylococcus pyogenes aureus conveyed from case to case by a certain midwife. 3. That while it appears chiefly in the newborn and is fatal only to them, it may attack older children and adults. 4. The eruption was bullous, and the specific micro-organism was found in the contents of the vesicle. 5. In many of the cases the skin eruption was the only symptom, while others showed evidences of internal infection, and invariably ended fatally. 6. The point of invasion in the fatal cases was the unhealed umbilicus. 7. Treatment had little or no effect upon the course and duration of the disease.

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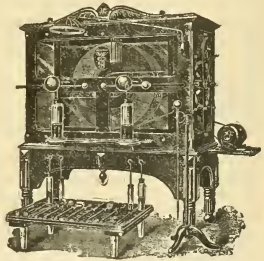
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A Scotch Doctor's Opinion.

The Quarterly Journal of Inebriety, so well and favorably known through the instrumentality of its brilliant and philanthropic editor, T. D. Crothers, A. M., M. D., quotes the following statement in reference to pain relieving remedies, from one of Great Britain's noted medical men, Dr. John Stewart Norvell, Resident Surgeon, Royal Infirmary, Edinburgh: "Antikam-

nia Tablets are a remedy for almost every kind of pain, particularly for headaches, neuralgias and neuroses due to irregularities of menstruation. They act with wonderful promptness; the dosage is small, two tablets. The undesirable after-effects so commonly attending the use of other coal-tar analgesics are entirely absent and they can therefore be safely put into the hands of patients, for use without the personal supervision of the physician."

Miscellaneous.

Pepto-Mangan; Its Therapeutic Action.

As early as 1849, Hannon demonstrated the presence of manganese in the blood, and in the same year Petrequin showed that iron and manganese decrease to the same degree in the blood of chlorotic persons, and therefore must be replaced in an equal measure. In 1857 Menke called attention to the pharmacodynamic significance of manganese in the mineral waters of Pyrmont, while Ruhle ascribed chlorosis to an impoverishment of the blood in manganese or iron or both conjointly. The most recent researches have not only confirmed these statements, but have demonstrated that manganese acts more powerfully upon the oxygen of the blood than iron, and hence promotes assimilation more energetically than the latter. That notwithstanding these initial experiments, the therapeutic use of manganese has fallen into oblivion, is attributable to the fact that hitherto it was not found possible to combine both these hematogenic elements in a form in which they would be easily absorbed.

If in the search for a preparation fulfilling these requirements we review the inorganic compounds thus far known, we learn both on the ground of theoretic considerations and practical experience that neither oxides nor soluble oxids, neither acid nor alkaline combinations of iron and manganese respond to the moderate demands.

Even the organic preparations heretofore produced—the iron albuminates and iron peptonates—suffer from similar disadvantages as the inorganic. The albuminate of iron is held in solution by a comparatively large amount of caustic soda, which neutralizes the gastric juice, while a decomposition takes place with the formation of the irritant chloride of iron. On the other hand, the peptonates of iron are rendered soluble by the addition of a relatively large quantity of mineral acids, and consequently are precipitated by the alkaline intestinal secretion and rendered more difficult of assimilation.

All the chalybeates hitherto in use therefore do not satisfy the chief requirement demanded of them, viz: a neutral reaction; moreover, they lack one important factor against chlorosis, anemia, and allied conditions—manganese.

In the Pepto-Mangan of Gude it has been found possible to unite all the advantages and eliminate all the disadvantages referred to above. It contains iron and manganese in a neutral combination with peptone. As will be seen from the literature published, this form, according to clinical experiments extending over ten years, has proved to be

the only one in which manganese plays a prominent part as an oxygen carrier in the function of the blood.

Dr. Heitzmann, of Vienna,* recommends during medication with Pepto-Mangan, a diet consisting of milk, the red kinds of meat, especially ham, poultry and soft boiled eggs, and other easily digestible foods. He has successfully employed the preparation in a number of cases, both in chlorotics and in girls and women who had become anemic in consequence of repeated losses of blood (memorrhagia, metorohagia) or after recovery from inflammatory processes of the pelvic organs (periand parametritis), as well as after long existing catarrhal discharges from the genital organs (leucorrhœa).

In most every instance he was able to observe a rapid increase of the appetite and an improvement in the bodily nutrition, a healthy color of the face, a gain in weight, and, on the other hand, a disappearance of the weakness and digestive disturbances. Heitzmann mentions with particular praise that Pepto-Mangan, as compared with similarly acting preparations, was gladly taken by the patient without any deleterious after effect, even during prolonged use. The fact that it is so well borne depends upon the pleasant appearance of the clear, dark, red fluid, and its agreeable non-metallic and non astringent taste. It does not act injuriously upon the digestive organs like other chalybeates, but, on the contrary, increases the appetite.

Dr. E. Hoenigschmied, of Weistrach, reports several very instructive histories of cases, of which we will produce one here in abridged form. Rosa H., 26 years old, has suffered since a number of years with chlorosis. The mucous membranes were pale, the pulse 140, small and thread like; the appetite was impaired; the stools irregular. The patient complained of lassitude, vertigo, tinnitus, dyspnea, and palpitation of the heart. As various other chalybeates were not well tolerated, because they produced a feeling of pressure in the stomach, and nausea, Hoenigschmied ordered Pepto-Mangan, in doses of one teaspoonful, twice daily, in some milk, besides aqua laurocerasi, in soda or raspberry juice. She was nourished exclusively on milk, with barley water and clear meat broth. After a few days the malaise and nausea subsided, so that the aqua laurocerasi could be discontinued, a desire for food manifested itself, and the patient was able to take besides milk some beef, a soft egg with a roll, and the like. The dose of Pepto-Mangan could now be increased to three teaspoonfuls, and

*Heitzmann: The Uses and Action of Pepto-Mangan Gude (Allg. Wr. Med. Ztg.)

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later to three tablespoonfuls, daily. At the end of six weeks her condition had so much improved that she was able to take a walk of three-quarters of an hour's duration without any weariness. The pulse had become quite vigorous, being 80 to the minute. The mucous membranes had a healthy color.

The other cases corresponded to that just mentioned in regard to the action of the preparation, which, according to Dr. Hoenigschmied, is superior to any other ferruginous remedy.

Dr. Ripperger* justly excludes as inconclusive evidence of the efficacy or inefficacy of a ferruginous preparation those cases of improvement in the quality of the blood from its use, in which the anemia follows profuse hemorrhages or extensive operations, or those cases of anemia due to gastritis in which both these conditions receive treatment, since it is impossible to determine how much is to be attributed to the

action of the chalybeate and how much to the natural regeneration power of the organism. Furthermore, those experiments are indecisive which are made on patients who have been only a short time in a hospital, because persons of the poorer class here obtain a more substantial diet, those of the wealthy class a more wholesome one, and this in itself is calculated to improve the quality of the blood. To permit of an objective conclusion only those cases of pure essential chlorosis are left which are treated in ambulatory practice, since their mode of life, conditions of nutrition and work remain practically unchanged before and during the use of the iron preparation which is being tested. Whatever improvement is then obtained in a case of chlorosis can thus be ascribed in great part to the medicament employed.

In accordance with these very rigorous requirements, Dr. Ripperger made his experiments with Pepto Mangan in the German Dispensary of New York. In these carefully selected cases the preparation was employed to the exclusion of any other treatment, and in 92 per cent, a considera-

*Dr. A. Ripperger (New York Medie. Monatschr. No. 12, 1898): A Few Remarks on the Ferruginous Treatment of Chlorosis, with Especial Reference to Pepto-Mangan (Gude).

ble increase of the percentage of hemoglobin was obtained. In a few other cases the result was negative. In all the successful cases the subjective condition was materially improved. Deleterious effects upon the stomach and intestinal canal were not complained of by any patient, and it was, as a rule, gladly taken.

This author, therefore, designates Pepto-Mangan as a very useful and easily assimilable, ferruginous preparation, which does not tax the digestive organs, and which deserves general consideration and use in the treatment of chlorosis.

A very extensive test of Pepto-Mangan has been undertaken by Dr. Pohl, of Vienna.* In conducting these experiments he made determinations of the bodily weight, the condition of blood pressure, the proportion of hemoglobin, and the number of blood corpuscles.

As regards the bodily weight, a reduction was observed in sluggish, obese, chlorotic patients, and an increase in lean persons, of course, in connection with an appropriate regulation of the diet. An improvement of the general condition always accompanied this.

There was constantly a change in the condition of blood pressure in the form of an increase of 60 to 80 mm. The variations of blood pressure in changes of posture disappeared; the pulse frequency fell considerably, and in connection therewith the unpleasant palpitation of the heart subsided.

There was frequently a rapid increase of the percentage of hemoglobin and the number of blood corpuscles. As evidence that Pepto-Mangan stimulates the blood-generating organs to greater activity, Pohl was able to note in numerous instances the appearance of so-called immature forms of blood corpuscles. This assumption is supported by the fact that in disease of the blood-forming organs, as for example in leukemic processes, an excellent curative effect was derived from the administration of Pepto-Mangan, so that even in severe cases the process was arrested and the glandular swellings were decreased.

In hysteria, neurasthenia, and malarial cachexia, the preparation proved of conspicuous service.

Pohl therefore predicts for Pepto-Mangan a permanent place in the pharmacopeia.

Dr. Frieser, of Vienna,* has presented the most recent report on this preparation.

*Pohl: On Pepto-Mangan (Gude) (Aerztlicher Central-Anzeiger).

*Frieser: Some Remarks on Iron Therapy; the Therapeutic Value of Pepto-Mangan (Gude) (Therapeutische Monatshefte, April, 1902).

†Dr. Hermann Mettall: A Contribution to the Therapy of Anemic Conditions. (Med. Chirurg. Zentralblatt, No. 1, 1902).

He found that excellent results were obtained not only in primary anemia and chlorosis but in all those diseases which are accompanied or followed by anemic conditions. Its action in scrofula and rickets was usually very satisfactory, and no less favorable in the initial stages of tuberculosis, where symptoms of anemia are frequently noticeable. This also applies to conditions of weakness and to convalescence from acute febrile exhausting diseases (pneumonia and typhoid), as well as to debilitating chronic affections which are frequently attended with anemia, such as tuberculosis, malaria, protracted gastric catarrhs, and other ailments in which the use of roborant and tonic remedies is indicated. Pepto Mangan showed to particular advantage in weak anemic children with reduced nutrition and in the anemia of women, especially after large losses of blood in which after a comparatively short period of administration (five weeks) a marked improvement both of the general condition and appearance of the patients, as well as of the character of the blood, manifested themselves.

Frieser regards Pepto-Mangan as a very efficient medicament which is entitled to a prominent place among the ferruginous preparations in ordinary use.

Finally, we would briefly recapitulate the observations published in this journal by Dr. Mettall.†

Twenty-three cases were treated with Pepto-Mangan, of which twelve showed a normal hemoglobin percentage at the end of fourteen days, five after three weeks, and five after a month. One patient, however, afflicted with a hereditary disposition, showed after two months' treatment only an increase to 75 per cent. In two cases of acute anemia, following a profuse hemorrhage, a favorable result was likewise obtained. In three women who had aborted during the first months of pregnancy, and made slow recoveries from the resulting anemia, a complete cure ensued after four weeks' use of Pepto Mangan. In six cases of weakness and impoverished blood, after chronic and acute exhausting diseases, a subsidence of the feeling of weakness and considerable improvement of the general health were observed. Unpleasant by-effects were never noticed.

I cannot conclude my review of the chief publications in the literature of this subject without pointing to the gratifying fact that the Pepto-Mangan of Gude has secured a firm place among the most favored remedies, far beyond the borders of our country.

I would refer here only to two articles that appeared in the *New York Medical Journal*, by Dr. Hugo Summa, Professor

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of Pathology and Pathological Anatomy, and the other by Dr C. A. v. Ramdohr, Professor of Gynecology. Judging from these two reports, both these American authors, while resorting in part to other methods of examination, reached the same results in regard to the effect of Pepto-Mangan in primary and secondary anemia as their European colleagues.—Otto Roen, M. D., Vienna, Austria. Translated from *Medicisch-Chirurgisch Central-Blatt*, No. 38, 1903.

Sublamine as a Hand Disinfectant.

I desire herewith to correct some mistaken conclusions drawn by Dr. Schaeffer (*Vol. XIX, No. 3*, of this publication) from the experiments made with Sublamine by Blumberg and me. On the basis of very thorough bacteriological examinations this drug has been praised very highly, indeed, by Paul, Sarwey, Furbinger, Fueth, Engels, and many others, and it has been employed for years with most excellent results in the Leipsic, Jena and other clinics.

Schaeffer is in error when he claims that all comparative experiments with hand disinfection, to be decisive, must be done on the hands of the same subject. Such tests would be fallacious, as each disinfection would lessen the receptiveness of the hand for bacteria; and if we were to wait a few days each time in order to allow the effects of the last disinfection to disappear, it would be impossible to employ bacteria of equal resistance for each test. The liability of error is far less when different hands are infected with a medium of nearly the same virulence on the same day. I have made due allowance for every possible source of error in these tests, and have always emphasized that my results are not of absolute, but only of comparative conclusiveness.

Schaeffer also thinks that it would be better to test concentrated solutions of antiseptics on pure bacterial cultures. But this method would lead to false conclusions. Paul and I at first used it, trying over 100 antiseptics in pure solution. But when we tested them in the presence of organic substances, especially upon the skin, we recognized that their action there is entirely different. For instance, chlorine water is the most powerful antiseptic in its action on spores and vegetable forms, as is also chlorine gas as developed in a watery solution of potassium permanganate and hydrochloric acid. Even solutions of 1% of the potash and $\frac{1}{2}$ % of the acid were extremely effective. But when this solution was tried on the properly prepared skin, there was no such intense bactericide effect to be seen. For not only spores, but vegetable forms of the bacteria could be gotten from hands so

treated, even when the antiseptic was allowed to act for many minutes. Chlorine loses almost all its efficacy in the presence of organic substances. A 1:1000 Sublamine solution, whose action is not to be compared with that of chlorine water on pure bacterial cultures, has a much more intense bactericide energy on the skin. This shows that we can draw no conclusion as to the action of disinfectants on the skin by their effect on pure bacterial cultures.

When dealing with solutions containing organic combinations, a direct bactericide action is far less necessary than an inhibitory effect on bacterial growth. For if we succeed in impregnating the skin with a disinfectant which continues to exhibit an inhibitory action when particles of the skin are transferred into an animal body, we have attained the desired object, namely, to disinfect the skin so that it can no longer infect. Hence we do not need to employ those metallic salts which are most actively inimical to pure cultures; there may be others which are better, either because of superior penetration or other practical advantages.

Schaeffer further objects to the animal experiment as a means of testing the efficacy of disinfection. The manifold difficulties connected with it and the various possible sources of error we have stated in our various reports. But Schaeffer mistakes in preferring his method, namely, subsequent culture of the skin scrapings on artificial media as a means of determining whether the bacteria have been killed. Disinfection is not necessarily synonymous with destruction of all bacteria. By disinfection we mean that the antiseptic employed has so reduced the virulence of the bacteria that they are no longer capable of growth and multiplication on a given medium under a certain temperature; but it by no means follows that the bacteria have been absolutely killed and it is readily possible that under favorable condition, perhaps in the body, they may again develop. The culture test is especially unsuited after disinfection with mercurial salts; for it is impossible to entirely avoid, by the use of ammonium sulphide, transferring some of the mercurial on to the medium with the skin scrapings.

Schaeffer will not deny that the comparative results of the animal experiments do enable certain definite, reliable conclusions. If, for instance, twenty persons infect their hands with the most uniformly resistant pure micrococcus tetragenus cultures possible (absolutely uniform culture are of course unobtainable), and ten of them disinfect their hands with antiseptic A, while the other ten for the same length

ANTIPHLOGISTINE

Has been so long and intelligently known that it is not necessary to discuss in detail its scientific action and therapeutic value.

When considering its usefulness however, we desire to have the physician bear in mind that which he has always been taught—that the essential conditions in all inflammatory processes, whether deep-seated or superficial structures, are practically identical. Then he can appreciate the fact that Antiphlogistine's field is almost limitless. It must ever be borne in mind too, that there is more or less of a retardation of the circulation in the affected part which may reach the point of stasis, in which event the cells starve to death and decompose; in other words the process terminates in suppuration. Antiphlogistine's prime object is to keep the blood circulating in an inflamed part. In pneumonia and other affections involving deep-seated organs Antiphlogistine, by stimulating the cutaneous reflexes, causes a contraction of the deep-seated and simultaneously a dilation of the superficial blood vessels, and this, combined with its hygroscopic properties acting directly, draws the blood to the surface—bleeds but saves the blood.

The potent hygroscopic property of Antiphlogistine, upon which so much depends, should always be carefully preserved by not needlessly exposing it to the moisture of the atmosphere or to water. It should always be heated in the can, spread upon the skin quickly and covered promptly with a liberal supply of absorbent cotton.

The fact that Antiphlogistine is in the twelfth year of its existence and in daily use throughout the civilized world speaks volumes in its praise. We trust the above may prove interesting to those familiar with Antiphlogistine and may cause some of the tardy ones to investigate the claims in the only satisfactory way—by experimenting and verifying.

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of time with antiseptic B; and if, say 200 mice upon whom A is tested all succumb to tetragenus infection while 200 other mice, upon whom B is tested, with the exception of two survive, the conclusion is justified that antiseptic B is better than A.

Sublamine is far less irritant than the bichloride, as has been shown in the years of usage it has had. This has been confirmed by Kruckmann and Imre in ophthalmology and by others. Often, when our hands were infected by direct contact with pus, we have used it in 1,200 and 1,100 concentrations and never noticed any irritations of consequence. Such sublimate solutions are intensely irritant.

In conclusion I can say the following:

(1) The fact that Sublamine in pure solution has not as strong a disinfectant action as corrosive chloride has long been known; but Schaeffer's conclusions as to the skin-disinfecting power of an antiseptic from its action in pure solution on bacteria are fallacious.

(2) Besides its far greater penetration, Sublamine has the advantage over corrosive sublimate that it is much less irritant and can be used in stronger concentrations.

(3) The decisive experiments of Engels, Sarwey, Paul, Blumberg, Schenk, Zaural, Furbringer, Futh, Danielsohn, Hess, and others, showing the effective action of Sublamine as a hand disinfectant, cannot be disproved by Schaeffer's experiments with Sublamine in pure solution on bacteria.—Prof. B. Kroenig of Jena. Abstracted from the *Monatsschrift für Geburtshilfe und Gynakologie*, No. 1, 1904.

Endermol, a New Vehicle for Ointments.

Endermol, a combination of stearic acid amide and paraffin hydrocarbons, forms an almost white mass of about the consistency of lard, inodorous, of neutral reaction and fusing at 78 to 80 deg. C. The iodine absorption number is 16.98, while that of lard averages about 62; a point in favor of the former as a vehicle for iodine.

When exposed to the air and sunlight under adverse conditions, samples of Endermol retained their color, consistency and blandness. When applied to the skin by inunction, Endermol forms a smooth, soft, unctuous mass which is readily absorbed. This may be demonstrated comparatively by applying a little of petrolatum, lanolin and endermol in separate portions by inunction to the skin and noting the time required for absorption. Furthermore, applications of endermol ointments of iodine (without potassium iodide), and also of aconite were followed by the excretion of iodine in the urine after about five hours in

the former, and the characteristic dryness of the throat in the latter.

Rancidity in fats is due to hydrolysis or splitting up of the esters of the fatty acids, with liberation of the free acids. To the presence of these the irritating properties of rancid fats are due. In Endermol, consisting chiefly of stearic amide, we have a stable fatty acid derivative which is not decomposed under any conditions through the action of light, air, moisture or such chemicals as are usually employed in ointments.

To demonstrate the adaptability of Endermol as a vehicle for ointments, mechanically as well as chemically, ointments with such substances as the yellow and red mercuric oxide, yellow and red iodide of mercury, zinc oxide, lead subacetate and carbonate, ichthyol, tar, vegetable extracts and mercury were prepared. All of these yield smooth, uniform ointments which showed no change whatever upon exposure.

The use of petrolatum, as is well known, is restricted to that of a dressing and this to a limited extent owing to its immiscibility with water, certain chemicals and galenicals.

Lanolin, an excellent vehicle, is objectionable because of its stickiness and toughness; and when combined with animal fats (as in lanolin creme), such ointments become rancid and offensive.

There is nothing so objectionable to either the physician or pharmacist as a rancid ointment. While lard or other animal fats may originally have been anhydrous and benzoinated, yet rancidity ensues sooner or later, particularly so when aqueous fluids have been incorporated, as frequently is the case in ointments. Aside from the irritant action, chemical reaction of the liberated fatty acids upon the medicinal agent follows.

Again, lard substitutes consisting of mixtures of suet or tallow or cotton seed oil, stear in with cotton seed, sesame or coconut oils, are not only open to the same objections, but also the possible presence of alum, alkalies or water, which render them still less desirable.

Because of its blandness, pliability and freedom from stickiness, Endermol is especially adapted as a lubricant for massage treatment, always leaving the skin soft and pliable.

To sum up, the advantages of Endermol as an ointment vehicle are:

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Freedom from irritating properties.—Virgil Coblentz, Ph.D., Pharm.M., F. C. S., New York. Reprinted from the Medical News, September 3rd, 1904.

Lactate of Strontium, in Albuminuria and Diabetes.

The value of lactate of strontium in albuminuria, while recognized by prominent physicians in this country, is still unknown to the majority of practitioners, whereas in Europe, it fills a place in the treatment of kidney trouble unoccupied by any other remedy.

Like many other therapeutic agents, the rationale of the action of lactate of strontium is imperfectly understood, but a plausible theory is that it exerts a profound influence on the processes of nutrition and reduces the formation of alimentary toxins to a minimum.

Clinical facts show a great improvement in cases of albuminuria, when the solution of lactate of strontium is prescribed. This applies to the albuminuria of pregnancy, post-scarlatinal nephritis, the early stages of Bright's disease, and in some cases of hepatic glycosuria. In the albuminuria of pregnancy it has been found advisable to combine the solution of lactate of strontium with some preparation of iron, preferably the tincture of the chloride, or Basham's mixture, and the same combination is recommended in post-scarlatina nephritis, while in the early stages of Bright's disease, it is advisable to place the patient on a milk diet.

Some physicians assert that appendicitis is frequently due to constipation, resulting in the formation of micro-organisms and ptomaines. In practice, it will be found advisable in such cases to give a saline laxative every morning (sulphate or phosphate of soda) and a tablespoonful of solution of lactate of strontium (P. J.) before each meal.

Combined with bromide of strontium (P. J.) the lactate is most successful in diabetes owing to the bromide's sedative action on the nervous system, thereby greatly reducing the amount of sugar as well as assuring better assimilation of food.

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The Beneficial Use of Salines in Faulty Metabolism.

Von Noorden in his "Klinische Abhandlungen" of this spring dwells especially on the merits of Saline mineral waters in modifying the formation of hydrochloric acid in gastric disorders. In a great number of catarrhal and other bad conditions, as well marked and permanent increase of hydrochloric acid is produced. On the other hand, in hyperacidity and particularly in nervous dyspepsia such Saline Waters reduce the acidity and produce a striking improvement in the symptoms. Even large amounts of saline waters do not interfere with the assimilation of fats or other foods, and, therefore, they are by no means detrimental, quite to the contrary, beneficial, in the treatment of obesity. In uricacidemia they are

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In an article dealing with some of the newer remedies, Dr. F. Bering, First Assistant in Professor von Dering's Royal University Dermatological Clinic at Kiel, says the following concerning Empyroform:

Empyroform, a condensation product of tar and formalin manufactured by Schering of Berlin, is a remedy calculated to displace all the other tar preparations. It can be employed even in comparatively recent and still oozing eczemas, and we have also used it in the very troublesome and obstinate infantile forms of the disease.

After the most acute stage of the eczema has passed under the influence of the usual desiccating remedies, we regularly employ Empyroform salve. We always obtained the very best results and saw no deleterious effects, even in cases where other preparations were entirely useless. Our results were entirely in accord with those obtained in Neisser's Clinic.

The effects of the salve was striking in a number of cases of scrofulous eczema of the face that had withstood every other variety of local treatment. It was an important aid to the healing process, though of course betterment of the general condition had to be striven for. Lichen scrophulosorum and prurigo were also favorably influenced by the drug. In very chronic eczema we found it somewhat too mild and sometimes had to have recourse to pure tar and combinations of this latter with other powerful remedies.

We used Empyroform in the form of 5 to 10% ointments; and the almost absolute absence of odor deserves especially favorable mention. Intoxication from the drug never occurred.—From *Die Therapie der Gegenwart*, July 1904.

In a paper on the "Local Application of Formaldehyde in Dermatology" (*American Journal of Dermatology*, July, 1904), Dr. August Ravogli, Prof. of Dermatology and Syphilography, Medical Department Cincinnati University, makes repeated favorable mention of Endermol. He has used it with very good results as a vehicle for ichthoform, empyroform, etc. An Endermol ointment containing 1 to 2 per cent. ichthoform acted very well in two cases of infantile eczema. Empyroform, which has been praised by the clinics of Prof. Nicolaier at Goettingen, Prof. Neisser at Breslau, and Prof. Pick at Prague, was successfully used as an ointment with Endermol in several cases of eczema. In some cases of squamous eczema, where a 1 to 5 per cent. Empyroform-Endermol ointment was used, the results obtained were also in accord with those reported by the above-named clinics.

It diminished the itching sensation, removed the scales, and restored the epidermis to a normal condition. The Empyroform-Endermol ointment was also used to conclude the treatment in infantile eczema, but there the effects were not so satisfactory.

With 1 to 10 per cent. formo-resorcin, Endermol makes a soft, homogeneous, slightly pinkish salve which is easily spread on cloth for application. The combination was used in leg ulcers and psoriasis.

In a clinical lecture on skin affections in children, Dr. W. S. Gottheil, Dermatologist to the City, Lebanon, and Beth Israel Hospital, New York, exhibits among others a case of psoriasis nummulata. The local treatment consists in the first place in the thorough removal of the scales by means of a hot water-green-soap bath and a scrubbing brush; this must be repeated from time to time as the necessities of the case demand. Of late he has been using tar very much more than chrysarobin, which was the favorite application some time ago. Tar is less likely to excite dermatitis and does not have quite so dreadful an effect on the patients clothes and general comfort. Rectified birch tar (*oleum rusci*) 10%, in olive oil or vaselin, will do very well; the proportion of tar is to be increased as the susceptibility of the patient's skin is ascertained. During the last winter he has been using a tar-formalin preparation called empyroform a good deal in these cases, and is satisfied with its effects. He prescribes for the cases in question a 5% empyroform-vaselin ointment, to be thoroughly rubbed in with a bristle brush on all the spots twice daily. The time required to clear the body should not be more than three weeks.—Abstracted from the *Archives of Pediatrics*, June, 1904 (Vol. 21, No. 5, p. 426).

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While in Americus I learned of Tasteless Quinine (Quinoliv) and used it in a number of mild cases of malarial fever with satisfactory results. Shortly after our arrival in Cuba, Maj. F. J. Ives, Brig. Surgeon, handed me a quantity of Quinoliv which had been sent him requesting that it be given a trial.

For a month Quinoliv was used to the exclusion of all other forms of the drug; a second month it was compared in alternate cases with Quinine Sulphate; as a result it is now prescribed in preference to any other form or preparation of Quinine. I heartily recommend it to the profession, for its prompt, reliable action and elegance of preparation.

Very respectfully,
J. S. DeMuth.

Surgeon in Charge Military Hosp.

The Charlotte Medical Journal.

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CHARLOTTE, N. C., NOVEMBER, 1904.

No. 5

EVOLUTION OF PSYCHIATRY; *

or

Progress in the Care and Treatment of the Insane.

By William Francis Drewry, M. D., of Petersburg, Va., Superintendent of the Central State Hospital, Petersburg; Va.

"So slow

The growth of what is excellent!

So hard to obtain perfection in this nether world."

Viewed in its historical, social, legal, humanitarian or medical relation, insanity is of general public interest, to both physicians and laymen. It differs from any other symptom-complex in that it involves the entire being, physically, intellectually, ethically, socially. Says some writer: "Insanity means, for the victims as well as those about them, dangers of various kinds, the gravity of which, in certain instances, can hardly be estimated. The insane themselves are in need of protection and care, which cannot in a great number of cases be given by the family, but can only be obtained by means of public aid." Almost as far back into antiquity as the records of the human race extend the mind of man has been subject to derangement, and the custody and treatment of the insane have attracted special interest. Dr. Frederick Peterson, in an address in 1902, before the New York State Conference of Charities, said that the gradual process of evolution in methods of caring for the insane may be roughly divided into four periods: First, the era of demoniacal exorcism; second, the chain and dungeon era; third, the era of asylums for the insane; and fourth, the era of psychopathic hospitals for the acutely insane, in cities, and colonies for the chronic and mixed classes of insane, in the country. The earliest historical reference to insanity is the feigned madness of Ulysses, just before the Trojan war. Centuries before the Christian era, among the Assyrians, Babylonians, Egyptians, Greeks, Romans, and other ancient peoples, insanity was regarded as a curse inflicted by the Gods. For a long time mental unsoundness was believed to be of demoniacal origin, and also that the changes of the moon had something to do with it. Plato regarded the priestess at Dodona, and the prophetess at Delphi, as insane. Athamas, king of

Thebes, and Ino, his wife, were accounted insane. Sophocles gives a fair clinical description of the insanity of Ajax, who lost his reason after the arms of Achilles had been awarded to his rival, Ulysses. He slaughtered animals, under the illusion that they were his human enemies. Euripides depicts graphically symptoms of epilepsy with homicidal mania, and believed that Bacchus could produce madness. Homer describes the fury of the Gods in inflicting melancholia upon Bellerophon. The insanity of Saul, King of Isreal, and Nebuchadnezzar, King of Babylon, and the feigned dementia of David, are mentioned in sacred and ancient history. Cambyases had epilepsy and became insane, and Cleomenes, King of Sparta, committed suicide by hacking himself to pieces. Philosophy as well as medicine sought to explain the nature of the strange malady. "There are two kinds of madness," says Plato, "one arising from human disease, the other from an inspired deviation from established custom." Hypocrates, living in the palmiest days of ancient Greece, five hundred years before the birth of Christ, held views in advance of his age. He ascribed insanity not to the Gods but to physical causes—"bad humors in the system," and prescribed remedies the purpose of which was to eliminate the disturbing "humors"—toxins, in modern nomenclature. Asclepiades and Diacles and the Roman poets refer to madness, and Juvenal mentions hellebore as a remedy. About a century before the Christian era another enlightened advocate of the humane and scientific care and treatment of the insane, Caelius Aurelianus, a celebrated Roman physician, taught that the insane were sick persons, and in accordance with this view had them removed from dungeons to more comfortable places, chains removed and humane care and treatment instituted. Celsus wrote a thesis on "madness" in which he advocated vivisection, cupping, abstinence followed by purgatives and emetics, but he flogged, bound in chains, secluded, coerced, and otherwise tormented the violent patients. But, like Asclepiades, he employed music to soothe the mental excitement. It seems that music is the first recorded remedy for the relief of madness, and has ever been highly prized as a means of soothing the ravings of the maniac or of enlivening the depressed spirits of the melancholy.

"Music, all powerful o'er the human mind,

Can still each mental storm, each tumult calm,

* Read in part at the Fourth Annual Meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Danville, Va., February, 1904.

Sooths anxious care on sleepless couch reclined

And e'en fierce anger's furious rage disarm."

It is recorded that some of the ancients, during the centuries just prior to the Christian era, condemned bodily restraints and advocated employment and recreation for the insane. Indeed employment and recreation, so much valued now-a-days, are by no means new methods of treatment. Dr. Benjamin Rush, in his great work, "Medical Inquiries and Observations Upon the Diseases of the Mind," gives the modern alienists sound lessons. Says he: "Man was made to be active. Even in Paradise he was employed in the healthy and pleasant exercises of cultivating a garden." In the expressive lines of Cowper, himself a victim of melancholia,

"Absence of occupation is not rest,
A mind quite vacant is a mind distressed."

The New Testament graphically describes the mental symptoms of one affected with epileptic mania: "Master, I have brought unto thee my son which hath a dumb spirit; and whosoever he taketh him, he teareth him; and he foameth and gnasheth with his teeth and pineth away." "Lord have mercy on my son; for he is a *lunatick* and sore vexed."

The rational doctrine that insanity was due to disease and that the insane were sick persons entitled to humane treatment and care, first taught by Hypocrates, disappeared from the face of the earth till the revival of civilization in the eighteenth century, barring a few isolated spasmodic instances. For centuries superstition and cruelty ran rampant. In the language of Dr. G. Alder Blumer, of Rhode Island, a distinguished American alienist: "Is it not amazing that such humane principles of care prevailing as they did in the first century of the Christian era, should have been lost sight of in the centuries of darkness that followed, only to be revived in equal fullness at a time within the memory of living man!"

In the latter part of the fifth century the monks founded at Jerusalem an "infirmaria" for the insane, not so much for the healing of sickness and the amelioration of the condition of the insane as for the punishment for sin. Asylums or infirmaries were established at intervals all through the Middle Ages, by the Mohammedians. The Franciscans, according to one historian, "used to whip daily those under their charge, and it would be idle to guess how many were burned, put to the rack, etc., under the theory of witchcraft and devilcraft." All through the Dark Ages the treatment of the insane, who were believed to be possessed of evil spirits, was cruel to the last degree. Many were burned

to death, others were tortured in the vain hope of extricating the evil from the power of the "Prince of Darkness."

The "wit-sicke man" of the Middle Ages, when superstition dominated the mind, was the victim of "medical" treatment curious as well as cruel. For instance, a mixture of many herbs and ale was to be administered from a church bell during a religious ceremony conducted by the priest. Or, "take a spew-drink, namely, lupin, bishopwort, henbane, cropleek, pound them together, add ale, let it stand for a night, and add cathartic grains and holy water." Or this: "Take a skin of mereswine (seapig or porpoise), work it into a whip and swinge the man therewith. Soon he will be well, Amen." St. Fillan's well in Scotland as possessing great curative properties is immortalized in Marmion:

"Then to St. Fillan's blessed well
Whose spring can frenzied dreams dispel
And the crazed brain restore."

In the latter part of the thirteenth century, during the reign of that most enlightened, sagacious and liberal monarch, Edward I, the "English Justinian," a law was enacted making the king the guardian of the insane and idiots: "The King shall have the custody of the lands of natural fools taking the profits of them without waste or destruction, and shall find them with necessities." The King also had control of the insane who had recurrent attacks and were liable to waste or destroy property at such times.

During the reign of Henry VIII, in the sixteenth century, "Bedlam," which was originally a monastery, was opened for the reception, says his Majesty, of "another set of crazy folks." That place of indescribable suffering and horrors has passed into history as the synonym of all that is bad, inhuman and beastly. It was one of the rules there that "no keeper or servant shall beat or ill-treat a lunatic without he considers it absolutely necessary for the better government of the lunatic." Sir Thomas More gave probably the prevailing idea of the treatment of the insane in the sixteenth century in his description of recurrent mania: "All be it he had bene put up in Bedlam and afterwards by beating and correction gathered his remembrances to him to come to himselfe, being therefore set at liberty and walking aboute abroad, his old fancies began to fall again in his heade."

Our own country passed through a stage of utter ignorance, superstition and cruelty in the treatment of the insane, but did not sink to as low a level as that reached in the old countries. In the earlier colonial days the insane were thought by many to be in

league with the devil. Some of the poor unfortunates of this despised class were regarded as witches, and in accordance with existing laws, hanged. A young woman in Salem, Massachusetts, lost her reason and created considerable commotion in the little town. Her case puzzled the neighbors. They thought surely she was possessed of the "Evil Spirit," consequently the parson prayed with her most fervently, but to no avail. Failing by this method to "extricate the devil," the doctor was sent for. He said that the woman's "distemper arose from the foulness of her stomach and corruptiveness of her blood, occasioning fumes in her brain, and strange fancies." Finally the doctor gave up the case, saying that the "distemper was diabolical," and suggested extraordinary fasting. A committee of ministers then considered the matter, but could do nothing to help the poor woman who declared that she had "signed a league with his black majesty, in her own blood." Fortunately there were not many insane persons in those days.

The earliest legislation in the colonies, looking to the public custody of the insane, was, it appears, by the General Court of Massachusetts. In 1676, when the horrors and atrocities of King Phillip's War had probably driven many "mad," the following unique law was passed:

"Whereas, there are distracted persons in some towns that are unruly, whereby not only the families wherein they are, but others suffer much danger by them. It is Ordered by this Court & the Authority thereof: That the Select men in all Towns where such persons are, are hereby Impowered & Injoined to take Care of all such persons that they do not Damnify others; And also to take care and Order the Management of their estates in the time of their Distemperature, so as may be for the good of themselves and Families depending on them: and the Charge to be paid of the Estate of all such persons where it may be had; otherwise at the publick Charge of the Town such persons belong unto."

About the middle of the eighteenth century, it is recorded that in different sections of this country some public interest in the insane began to be aroused. In 1745 an Act was passed in the Council Chamber of the Colony of South Carolina, and renewed in 1751, giving any justice of the peace authority and requiring him, upon complaint, to cause any "lunatick" slave, whose owner was unable to maintain him, to be secured in some convenient place and to provide for such "lunatick" and prevent him or her from doing any mischief. The cost of keeping and maintaining such "lunatick slave" was defrayed at the public expense.

Prompted by philanthropic motives, Dr. Thomas Bond and Benjamin Franklin, petitioned, in 1751, to the Provincial Legis-

lature of Pennsylvania, "that with the numbers of people the number of lunatics or persons distempered in mind" had so increased that there was "need of a hospital for their reception and cure." As a result of this effort, a part of the Pennsylvania Hospital, at Philadelphia, was set aside, in 1752, for the insane. Here American psychiatry was christened. Here Rush, statesman, philanthropist, physician, alienist, teacher and author—the "American Sydenham"—wrought great things for medical science of that day. He, the "father of psychiatry" in America, gathering from his experience in this hospital, "wrote," says Dr. Isaac Ray, the great medico-legal insanity expert and author of "A Treatise on the Medical Jurisprudence of Insanity" (1838), an old standard of excellent value, "the first work on insanity, in the English language, which displayed observation and original thought." He believed and taught that insanity had its origin in the blood vessels of the brain, was "an arterial disease of great morbid excitement or inflammation," and, with a view to relief, bled freely, prescribed blisters and emetics and restricted diet. That he had some modern and humane ideas, however, is demonstrated in his writings describing the changes which had been made at the hospital. This was probably in the latter part of that century. Says he: "In the treatment of the insane the clanking of chains and the noise of the whip are no longer heard in the cells. The patients now taste of the blessings of air and light and motion, in pleasant and shaded walks in summer, and in spacious entries warmed by stoves in winter." Yet, he believed in "mild and terrifying modes of punishment." On entering the "cell" of an insane man he proceeded first "to look him out of countenance." Hypnotism perhaps!

The first movement on this continent toward establishing an asylum by public authority, was made by the Colony of Virginia, in 1769. Four years later, in 1773, the "hospital for the reception of idiots, lunatics and persons of insane and disordered minds," was received by the "Court of Directors," appointed under Act of Assembly, and declared to be ready for patients. The Act provided that the object of this institution was the "cure of those whose cases are not become quite desperate, and for restraining others who may be dangerous to society." James Galt was appointed "keeper" of the new institution, and directed to call in Dr. John de Segueyra, a member of the Court of Directors, to visit such persons as shall be brought to the hospital, at their first reception and at

such other times as may be necessary." It was in 1774 that the visiting physician was chosen. Clinical records were early in use, for in 1795 it was ordered "that a book be kept at the hospital, in which the physician is to make entries of the state of the patients, his attendance and prescriptions." Compare those records with the medical charts and records of to-day! Not till 1841 were the positions of keeper and physician merged into one. Dr. John Minor Galt, the younger, (for there were three Doctors Galt), was appointed to this position which he held till 1862, when the Federal soldiers took possession. Observe, if you please, that in the very beginning Virginia used "hospital" instead of "asylum." The hospital was closed during the Revolutionary War, on account of insufficiency of funds, and was not reopened till 1786.

By the end of the eighteenth century there had been built on this continent but four public asylums for the insane: In Pennsylvania, Virginia, New York and Maryland. To-day there are about two hundred public and a large number of private hospitals for the insane, and as a rule they are conducted by skilled alienists. The Virginia hospital was the only one of the above four under the exclusive control of the State, thus the Old Dominion was the pioneer in State care and supervision. The insane were kept mainly in poorhouses, jails and lockups, or chained in some obscure and secure place, to suffer and die like mere brutes. There was no medical treatment worthy the name. Bleeding, purgatives, emetics, blistering, constituted the prevailing medical treatment. Occupation and recreation were, however, beginning to attract a little attention.

For a moment let us turn to Europe and see what progress was being made there. It was near the close of the eighteenth century before any material advancement had been made in that part of the world, in either the humane care or the medical treatment of the insane. Science had been making a desperate struggle to extricate itself from the bondage of the ignorance and horrors of the Dark Ages. During the storm period of the French Revolution, Philip Pinel, an apostle of science, appeared on the scene with a determination to deliver the insane out of this bondage. As physician to Bicetre, and the Salpetriere, he saw daily the indescribable suffering and torture of poor "crazy" creatures, bound in chains, secluded in filthy, dark cells, heard their moans and cries of distress, their yells and screams and curses, making the place a veritable hell on earth. "I am convinced," said Pinel to Caution, an agent of the

Commune, who had warned the great physician of the danger of unchaining them, "that these lunatics are so unmanageable only because they are robbed of air and liberty, and I dare hope much from the opposite means of treatment." "Well," said Caution, "do with them what thou likest, but I am afraid thou wilt be the victim of thy presumption." In the face of prevailing ignorance, distrust, suspicion and opposition, the good doctor proceeded to loose the manacles which had been worn continuously for many years—thirty in some instances.

While Pinel "forecast the modern hospital for the insane," his pupil and successor, Esquirol, advanced the pathology of insanity. The teachings of these humanitarians and scientists were received throughout the civilized world with intense interest, and constituted the first distinct move in the modern evolution of the care and treatment of the insane; but yet, strange as it may seem, France as well as England, waited nearly half a century before enacting laws looking to the establishment on a firm basis of their rational treatment. To require good behavior of the insane was in order. It is said that even His Majesty, George III, while insane, was "knocked as flat as a flounder by the scientific fist treatment of an attendant."

In the early years of the last century, cruel, indeed, were the methods still in vogue of treating the insane. Listen at this: The "hollow wheel" much used and commended, consisted of a short cylinder or drum with heads partially open to prevent suffocation. Here the excited patient was confined, and when he became too violent the drum was stood on end so as to cause the victim to stand on his head, which was thought to produce a fine effect, and it usually did, in a way! The poor creature was frightened almost to death. Suddenly precipitating a patient into a well of cold water, half drowning him, was considered excellent practice. The rotary swing or chair, suspended from the ceiling enabled an attendant to turn his patient round at a degree of velocity to suit the needs of the case. I might go on almost indefinitely relating cruel and ridiculous methods of dealing with "lunatics" of that time. Poor creatures, their beds consisted of hard planks and a pile of straw, usually filthy. In their cells heat, light and sunshine were luxuries not enjoyed. Their coarse diet was usually served to them as if they were so many animals.

The Tukes, of England, had become imbued with the humane spirit, and at Bethlehem and York had instituted reforms similarly inaugurated by Pinel in France.

It appears, however, that this reform move took hold slowly, as above stated, upon the English mind, for in 1828 the only existing law affecting the insane was one providing for their being "locked up and chained in secure places." The condition of the insane confined in jails and poorhouses had become so horrible, that that year the first authorized commission to supervise the care of the pauper insane in London was appointed. In 1839 Connolly boldly lead a reform move for non-restraint and the kindly care of the insane. Like Pinel, he accomplished much, but still abuses in the English asylums were so atrocious that in 1842 the Lunacy Commission was appointed for the purpose of supervising the care of the insane throughout the Kingdom. A new era was inaugurated and ever since there has been, with few exceptions, an upward trend in the care and treatment of the insane in that country, till to-day its methods of treatment and care honor the highest type of civilization.

In some parts of Germany distinct advances had been made before the end of the eighteenth century. Hospitals conducted on humane lines had been established at Frankfurt-on-the-Main, Lubeck, Berlin and Brunswick. While a medical certificate was required for the admission of a lunatic to the asylum at Berlin, Heiuroth, an authority of that day, taught that insanity and sin had a common origin. Another German scientist, skeptical to a degree, wrote in the early part of the last century: "God only knows whether an insane person can be cured or not."

Up to the beginning of the nineteenth century comparatively little progress, you observe, had been made, anywhere. The insane were usually treated with either cruelty or indifference. Under the Napoleonic Code, it was unlawful for "the insane and mad animals to run about free." Mark the association of the insane with beasts! They had to be locked up—put out of the way. This was simply a "negative mercy" to the insane on the part of society, compared with previous times.

The first effort made on the part of the British government in the Provinces north of us toward special care of the insane was made by New Brunswick, in 1835. There was at that time a law authorizing "Any two justices of the peace to issue a warrant for the apprehension of a lunatic or mad person, and cause him to be kept safely locked in some secure place directed and appointed by them, and if they deem it necessary, to be *chained*."

Dr. T. J. W. Burgess, President of the American Medico-Psychological Association, said a few years ago in a presidential

address before the Royal Society of Canada, that, "Saved by virtue of her youth from participation in the horrible cruelties which stain the annals of the history of the insane from the fall of the Roman Empire to the beginning of the present (last) century, Canada has yet no reason to be proud of her early treatment of this unfortunate class."

Two years ago I visited several hospitals for the insane in Canada and was impressed with the excellent manner in which they were conducted and the humane care and scientific treatment given the patients. These things could not be otherwise as long as such able alienists as I met presided over the institutions.

"As late as 1837," Prichard wrote, "at Rome iron rings armed with chains fixed to the wall served to confine the furious and turbulent maniacs, who were fastened by the necks and feet. There were no recreation grounds nor means of employment." In Hanover, Germany, "lunatics, idiots, thieves and murderers were indiscriminately mixed in the same prison cells."

Several years in the nineteenth century passed before there was scarcely any pretense of improvement in the medical treatment of the insane. The physician, when any, held a subordinate position under a lay manager or warden who was generally of a speculative turn of mind, looking out for the paying side of the establishment.

About 1840 marked the beginning of a new epoch in our country in the care of the insane, which was due in a very great measure to Miss Dorothy L. Dix, who, in 1838, began on her humanitarian mission to reform the existing methods and to ameliorate the deplorable conditions. There were then only ten asylums throughout this country and Canada. These, however, were conducted generally on fairly humane principles. Nearly all the insane were secluded in filthy jails, lockups, poorhouses, or cellars and garrets at home, etc., neglected, morally, mentally and physically. Through her wonderful influence nearly twenty hospitals for the insane were established by as many states; and besides, many in Europe and some in Canada owe their origin and development to her efforts. Indeed, her own humane sympathy for the insane touched the responsive chords of common humanity everywhere.

Medical superintendent or resident physician supplanted lay-manager or keeper. More strictly speaking, medical treatment began to be emphasized, restraints became somewhat less frequently used and the liberty allowed to the patients more general, and the scientific study of insanity began to arouse some interest. With

the more general introduction of medical superintendents into the institutions, came rapid improvement, too, in hospital construction, equipment and management.

The year 1844 was a specially notable one in the history of the insane in this country. That year the "Association of Medical Superintendents of American Institutions for the Insane" was organized with thirteen members. To a Virginian, Dr. Francis T. Stribbling, belongs the honor of being one of the two original movers in the organization of this association, Dr. Samuel B. Woodward, of Massachusetts, being the other. "The prominent objects of the association," wrote one of its founders, "are by a comparison of views, and a careful study of what has been done for the insane, to secure, for the future, a higher standard for hospitals, and a more liberal and enlightened treatment for all classes who are suffering from mental disorders." Fifty years later the name of the association was changed to the "American Medico-Psychological Association."

The public conscience had been aroused. That the indigent insane were "wards of the State" (a term coined by Horace Mann) and should be under the fostering protection of the commonwealth, was soon recognized as the key to the problem which had perplexed the world for ages. Now that the insane had been emancipated from the grip of ignorance, superstition, mysticism and barbarism, and the State had, in a great measure, recognized its duty to them and to society, the great material problem of making proper and adequate provision for their general care was to be solved. The establishment and construction of institutions, enacting laws to regulate their management, and to insure to the insane their rights as citizens of the State and human beings afflicted with disease, demanded the services of the practical alienist, the wise legislator, the economist and the humanitarian.

State hospitals were built in rapid succession. Virginia had already built one at Williamsburg in 1769, and another at Staunton in 1828. South Carolina had built one at Columbia the same year. In 1849, through the influence of that public benefactress, Dorothy Dix, a bill was passed establishing the State Hospital at Raleigh, North Carolina, which was opened in 1856. In 1875, the erection of that magnificent structure at Morganton, North Carolina, was begun, and in 1883 opened for the reception of patients. Virginia, not being content with two hospitals for her white insane, erected another, at Marion, in the Southwest, in 1887. In her benevolence, the old Commonwealth established, in 1870,

the first asylum ever built exclusively for the negro insane. Sometime in the forties, 1844, I believe, Dr. Stribbling, Superintendent of the State Asylum at Staunton, this State, one of the ablest alienists of his day, and "a man of warm and generous feelings and inflexible firmness," recommended to the Legislature the building of a separate hospital for the colored insane, who were being cared for in separate wards at the hospital at Williamsburg. Under the superintendency of Dr. Randolph Barksdale, a Virginia gentleman, an accomplished scholar, an able alienist, a broadminded humanitarian, this institution developed into one of the greatest public charity in this country. North Carolina, however, followed Virginia's example in 1875 by establishing, at Wilmington, a branch asylum to the one at Raleigh, for the colored insane, and in 1882 opened the hospital at Goldsboro exclusively for the colored insane of the State, which is now under the management of that humane Southern gentleman, Dr. J. F. Miller. At the first meeting of the Association of Superintendents, in 1844, a committee composed of Drs. Galt and Stribbling, of Virginia, and Awl, of Ohio, was appointed to look into the matter of "asylums for colored persons."

In all the Southern States, except North Carolina and Virginia, where there are separate institutions for them, the colored insane are well cared for in separate buildings set apart exclusively for them.

Advances in the architecture and equipment of hospitals have been demonstrations of advancement in our knowledge of the needs of the various classes of the insane. Asylum architecture, equipment, furnishing, heating, lighting, ventilation, sanitation, water supply, bathing, etc., have all followed the trend of modern enlightenment, until to-day they are well nigh at a point of perfection. The modern hospital for the insane is "an honor to the land, a school of medicine and a means of conferring an enormous amount of benefit upon those who enter its kindly portals and enjoy the advantages of the skilled treatment pursued."

First came the massive quadrangular and linear plan of buildings, or what is known as the Kirkbride plan, taking the name of the distinguished alienist and humanitarian, Dr. Kirkbride, of Philadelphia; then came the partially detached buildings, but under one roof, all with interior corridors after the fashion of the ancient monastery. Some of these old hospitals are magnificent structures. Then came the cottage or pavilion plan, first in use in France, by which is meant comparatively small cottages

grouped about the administrative building, adapted to the accommodation of different classes of patients, viz: the acute cases, the chronic cases, the demented, the violent and noisy, the epileptics, the sick and infirm, and so on. These cottages on the exterior resemble ordinary dwellings. Usually there are open porches attached. The interior arrangement provides for single bedrooms, dormitories and day or sitting rooms. Nearly all the new State hospitals established in this country during the past twenty-five years and the additions to existing institutions, have been constructed on the pavilion or the cottage plan, being the only plan yet which permits of proper classification of the patients, insures safety from extensive damage by fire, and affords the best hygienic advantages.

In the construction of hospitals in very recent times, there is a notable lessening or absence of the old time iron window guards, bolted doors, etc., which formerly gave the aspect of a prison rather than a hospital. Everything now tends to a home-like appearance. Moreover, the interior arrangements for comfort and not so much outside show, mark the most up-to-date hospitals. The associate room, or dormitory, in which several patients sleep, much after the fashion of a ward in a general hospital, has in a great measure supplanted the single room.

The colony system, which in recent years has so rapidly grown into favor, deserves mention. The colonization idea of caring for the insane had its origin at Gheel, in Belgium, the "city of the simple."

The Colony of Gheel typifies the family care of the insane in village life, differing from the unique Scotch system in that the latter insures family life in the country. In an article from Dr. Paul Masoin, physician to the colony, published in the September number of the *Journal of Nervous and Mental Diseases*, New York, the characteristics of the colony and the general system of caring for and treating the insane throughout his country are clearly set forth. There are in the colony 1800 patients, thirty-five per cent. of whom are idiots and imbeciles, scattered over 5000 acres, under the care of 1200 home nurses. "The insane patient," says Dr. Masoin, "enjoys the greatest possible liberty in his out-of-door surroundings, and in his home meets with affection and devotion, and shares, unless his intelligence is too shattered, all the joys and sorrows of his adopted family." The colony, which had its origin several centuries ago in a primitive infirmary—the fruit of certain superstitious religious beliefs, was under the supervision of the clergy till

1851, when, being threatened with ruin, the government assumed control and has since regulated its affairs. At the International Congress on the Care of the Insane, held in 1902, at Antwerp, the asylum system in Belgium was the "object of lively recriminations," while the methods of colonization aroused much interest of another kind."

By one colony plan of to-day, an existing institution procures in the neighborhood, some distance from the main plant, a farm and constructs thereon cottages and arranges them to meet the requirements of a certain class of patients selected from time to time from the inmates of the hospital. These colonists, under supervision of attendants, lead a quiet, unrestrained life, much to their benefit. The system has so rapidly grown in favor that it is being expanded so as to include quite a large proportion of the chronic insane. Several of the Southern State hospitals have adopted this modern method, viz: Alabama, Georgia, North Carolina (hospital at Morganton), and Virginia (hospital at Petersburg). In several other States and countries the plan has been adopted. Another colony plan consists of segregated cottages scattered in a picturesque manner over a large farm, such for instance as the institutions at Kalamazoo, Michigan, Kankakee, Illinois, Craig Colony for Epileptics, new Willard Hospital, New York, and the Maryland Hospital at Sykesville, which, by the way, is in design and general arrangement one of the most unique institution in America.

Ten years ago, Dr. J. W. Babcock, the talented Superintendent of the South Carolina State Hospital, read before the Medico-Psychological Association a strong paper in advocacy of separate provision for the insane who were suffering from tuberculosis. He pointed out the great prevalence of the disease amongst the insane, quoting largely from hospital physicians who had long observed this fact. Since then the segregation of the tuberculous in separate cottages or camps, has been a distinct advance, which promises well-nigh universal approval. Fresh air and sunshine being recognized as the best remedies for tuberculosis, canvas tents have already been put into use at some of the hospitals for the insane. The plan has been in successful operation for a few years at the Rhode Island Hospital and at the Manhattan Hospitals, New York State, in Indiana, and probably elsewhere. At the State Hospital at Petersburg, this State, sixty consumptives are domiciled in tents pitched on the rear lawns. One tent in each group serves as a dining-room and another as a bath-room and lavatory.

Tuberculous patients sleep and live in these tents eight months, or longer, of the year, and in some instances the entire year. Besides this class, the demented, untidy and infirm are being similarly provided for at some hospitals, and even the acute and recoverable cases of insanity are being thus cared for.

Camping out is another excellent way of providing temporarily for some cases, by which they enjoy an outing of from a day or two to several weeks, leading a life entirely different from that they led at the main plant. The change can but be beneficial.

Scotland has a system of caring for the insane, by which patients are boarded out in private families instead of having them concentrated in institutions, or in villages as is done in Belgium.

In that country north of the Tweed, about twenty per cent. of the insane—the quiet harmless, incurable classes—are boarded out in private homes, not more than one or two patients being permitted to live at the same place. Twenty years ago under the leadership of Hon. Frank B. Sanborn, Massachusetts began the experiment of the Scotch boarding-out system, but so far the people have not seemed to give it extensive approval either in that State or elsewhere in this country. About two hundred are boarded out in the Bay State. The reason, probably the system has made such little progress in our country is because the insane can be cared for cheaper in State hospitals.

In making provision for the insane several of the States and foreign countries, recognizing the rights of the innocent, have established separate institutions or made special provision for the criminal insane. Among the States that have adopted this progressive policy are New York, Michigan, Massachusetts, Illinois, North Carolina, Iowa, and Ohio. Virginia has considered the subject to some extent. A law was recently enacted providing that "If any person convicted of crime and sentenced to confinement in the State penitentiary became insane during the term for which he has been convicted and sentenced, he shall be confined and treated in a special ward in the State penitentiary to be set aside and reserved for such insane criminals." This is simply the first step, in the right direction. Dr. P. L. Murphy, of Morganton, North Carolina, who has ably led this reform in that State, well says: "As to the wisdom of separation of the criminal from the ordinary insane, there is but one opinion among alienists and criminologists on both hemispheres."

Several States, notably Ohio, New York, Massachusetts, New Jersey, Texas, Penn-

sylvania and Kansas, have established separate institutions for sane or insane epileptics, or for both. These institutions are usually built on the farm colony plan, and all manner of outdoor and indoor industries are carried on by the patients. In a number of other States separate buildings at the existing hospitals have been provided for this class of insane patients. At the Virginia Hospital, at Petersburg, for the negro insane, this was done several years ago (1896) and has given great satisfaction.

In the advancement made in almost every land in the humane care of the insane, it may be said that the "high-water mark of civilization has been made." The burning question of non-restraint has been solved forever. The straight-jacket and the leather cuff or muff, the iron wristlet, instruments of restraint which succeeded the chain and other implements of torture, are now, at least in most hospitals, in the museum.

In the matter of restraints it is interesting to note that as late as the seventies there were a goodly number of hospital superintendents who still advocated the use of restraint as a curative measure of importance. Where can such hospital physicians be found to-day?

In many of the States, trained attendants convey patients to the hospitals; and in some hospitals trained female nurses are sent for unfortunate female patients. Personal liberty, comfort and kindly care prevail everywhere. The open door system has been largely adopted. Large recreation grounds, farms and gardens, work-shops, recreation halls, chapels, all manner of congenial employment, farming, attending to stock, manufacturing articles for use at the hospital, assisting in all the work done in the several departments about the place, etc., diversion and amusement, cards, golf, baseball, football, etc., music, religious services, day and Sunday-schools, are all the outgrowth of modern enlightened ideas of insanity, and are carried on, more or less, at all the hospitals. In the dietary and dining-rooms, which now constitute special features in almost every hospital for the insane, are found conspicuous evidences of advance.

Paroling of patients, who are not regarded as dangerous, for a specified period, subject to being returned to the hospital without a new process of commitment—thus giving them an opportunity of visiting home and friends—a system now well-nigh universally adopted, is one of the signs of the humane and considerate manner with which the State deals with the insane.

Wherever modern Christian civilization has extended, the humane care of the insane

has been established or is being established upon a firm foundation. It is sad to contemplate, however, that there are peoples still upon God's globe who have not emerged from the barbarism of the middle ages, in the care of the insane. The Chinese government for instance has never made any provision for the care of its insane. Those apparently dangerous are treated as criminals and the rest allowed to roam the country as irresponsible beggars. The Chinese to this day attribute insanity to demoniacal influences. Chains and close confinement still prevail, even among the wealthy. Five years ago no hospital for their care had been established in China save by Christian missionaries.

In far-off Thibet it is said that mental aberration is frequently charged to the noxious ghost of some departed relative. To cure the unfortunate thus afflicted the ministrations of the priests are thought necessary. In their presence and under their directions burnt offerings are made, the last rite and the one which is to put an eternal quietus on the shadowy visitor consisting of the burning of a piece of paper, containing the name of the deceased relative, on a pile with the "magic circle."

Referring again to State care, let it not be understood that all the States in this country have adopted the State care method and are providing for all their indigent insane in institutions under State supervision. The county system—confinement of the insane in almshouses or other local institutions—still prevails too largely in some States. Wisconsin has the county system, and it is said by some that it works well. From my knowledge of the plan, I think it is objectionable. In one of the Trans-Mississippi States, where the poorhouse system of caring for some of the indigent insane unfortunately exists, a reliable investigator reported last year that in some of the poorhouses the insane were "chained to the wall till they were quiet," or "put in cells handcuffed and tied with ropes," "tied by block and chain," "locked in cells too filthy for adequate description." Fortunately these instances are the exceptions and have grown fewer and fewer. Too often even in States where the insane are under State care, these poor, helpless unfortunates are sent to jail temporarily, where they have to associate with criminals. Efforts are being made, however, in every State to correct that condition of affairs everywhere it exists.

It is gratifying to say before the Tri-State Medical Association of the Carolinas and Virginia that in South Carolina all the insane are cared for in the State hospital at

Columbia, where there are more than 1200, about 700 of whom are white and the rest negroes; and that Virginia, too, is giving excellent care to her insane—about 3100, 2000 white and 1100 colored—in her four State hospitals. None are kept in jails or poorhouses. North Carolina, I regret to say, is not so fortunate in respect to her insane, as there are several hundred for whom special provision has not been made in the State hospitals, many being confined in jails and poorhouses. Within the past two years, however, the accommodations at the existing institutions have been materially increased, till now there is a total of about 2150 under State care, 1550 of whom are white and the rest negroes.

Recognizing the superior advantages of exclusive State care of the insane over any other method, Massachusetts will, before January next, have all the insane removed from almshouses to the State hospitals, the latter having been enlarged for this reason. In increasing the capacity of the State hospitals, the opportunity has been made to add colonies, infirmaries, special buildings for disturbed patients, and nurses' homes. The next step, it is said, will be special buildings for acute cases. Four years ago Ohio began to exclude by law the insane and epileptics from the county almshouses, and, in order to carry into effect such a law, all the State hospitals have been enlarged.

In light of the reforms which have so completely revolutionized the care of the insane, the prejudice against asylums, has for many years, been disappearing. This change in sentiment is due, in a great measure, to three things: First, the supervision by the State, which has now almost everywhere recognized its obligations to the insane. Second, training of attendants and nurses to a perfect understanding that the insane are diseased people. Third, establishment on a firm basis of the medical care and treatment.

It is interesting to observe also that certain changes in nomenclature have doubtless had effect in helping to dispel the old time horror of asylums. There is something in a name. The term "mad house" gave way to "lunatic asylum," and that in turn to "hospital" or "sanitarium;" and now the term "psychopathic hospital" or "psychiatrum" has been suggested. "Dementiac," "madman," "lunatic," "cell," have gradually disappeared from medical literature, and even in the statutes of most of the States asylum and lunatic are no longer used. We now frequently hear "phychoses" in place of "insanity." "Keeper" and "guard" have been supplanted by "attendant" and "nurse;"

"warden" by "resident physician and superintendent."

There has been one advance in the last twenty-two years which distinctly marked a new era, I refer to the training school for nurses in hospitals for the insane. Dr. Edward Cowles, until recently Superintendent of the McLain Hospital, Massachusetts, successfully inaugurated this great educational reform. To-day nearly every public hospital and some of the private ones for the insane, have well organized training schools, and annually hundreds of trained young women and men contribute materially, not only to the betterment in the care of the insane in hospitals and in private practice, but in "disseminating information regarding the nature and treatment of nervous and mental diseases." In the teaching and training of nurses, the members of the medical staff themselves become more efficient, for they learn as they teach, and their knowledge becomes more exact.

Speaking of trained nurses, in several of the progressive institutions of this country and abroad the experiment of employing female nurses for certain classes of male patients has been tried with considerable satisfaction. The late Dr. A. B. Richardson, Superintendent of the Government Hospital for the Insane, said: "With the lapse of years, and as my experience has been extended, I have been more and more impressed with the fact that the female is, generally speaking, better adapted to the position of a nurse for the sick insane than the male."

In the modern hospital the patients are cared for no less at night than in the day. On retiring they are not "locked in" till morning, but the night nurse is on hand to look after their wants and see that they are comfortably cared for throughout the night. Quite a large proportion of patients, in many of the hospitals, never have their room doors locked at all. I can bear witness to the satisfaction of this method, having adopted it years ago.

The scientific medical treatment of insanity, it must be admitted, did not until recently keep pace with the advancement in the custodial and humane care. The reasons are not far to see. Says the versatile Dr. Blumer: "For many years the building of asylums, their organization and development absorbed the energies of the alienist, leaving till these demands of humanity had been fulfilled, the more leisurely elucidation of the scientific problems involved, in the treatment of his patient." "The practical problems," says Dr. Frederick Peterson, former Chairman of the New York Lunacy Commission, "are the

emergencies of the hour, the scientific, the heritage we bequeath to posterity."

In the South the vicissitudes incident to the Civil War were for many years a bar to progress both in making adequate provision for the insane and in the pursuit of medical and scientific work. In recent years, significant advancement has been made in every Southern State. Recently I have visited the hospitals in Maryland, North Carolina, South Carolina, Georgia, Alabama, Mississippi, and Virginia, and there was to my mind abundant proof that the advances being made nearly everywhere compare favorably with those I have seen in other States and in Canada, and this despite the lack of abundant funds. Indeed, most of the Southern institutions have taken on new life. The high types of the scientific and the practical alienist I met in these institutions would at once vouchsafe the excellent character of the medical work and humane care maintained. Probably the most pronounced advocate in this country of non-restraint and employment of the insane was the late Dr. Peter Bryce, of Alabama, and his mantle fell on the worthy shoulders of the scholarly Dr. Searcy. There are several institutions in the South in which there is *absolutely* no mechanical restraint permitted. Of this I know whereof I speak.

But let it not be forgotten that advancement had and still has obstacles to surmount. No sooner had the process of providing State institutions for the insane been under way than the *practical* politician saw his opportunity to come in for the "loaves and fishes." Too often official position in connection with the management of a hospital—on the board of directors or managers, or on the resident staff—has been awarded with little regard to fitness or qualification, but simply as a reward for political services rendered the dominant political party or the successful faction in that party. It is well known that the instances are many where the management of an institution has passed from the hands of experienced and capable persons to others who had no special qualifications. Competent medical officers and trained alienists have too often been succeeded by totally incompetent physicians who had served their party, or their faction better than they had served, or were capable of serving, humanity or science.

As early as 1848 the medical superintendents were fighting the political management of hospitals, for in that year the National Association adopted a resolution strongly deprecating the selection of hospital officers on political grounds, being "a dangerous departure from that sound rule which should govern every appointing

power, of seeking the best men irrespective of every other consideration."

Dr. T. O. Powell, the benevolent and broad-minded alienist, of Georgia, in his presidential address before the American Medico-Psychologist Association, in 1897, truly said, that "the thing that is most to be deplored and apprehended is the tendency to subject the care of this afflicted class to political spoilsmen, a flagrant injustice both to the insane and the faithful and efficient officers. It is a violation of all the dictates of humanity, a blot and reflection upon our Christian intelligence, that such a sacred, humane and Divine trust should be carried into politics for selfish considerations."

It has frequently been a source of discouragement to better qualified and more progressive men to enter the hospital service because so many professionally incompetent ones have been appointed to or kept in office year after year. It has been truthfully said that "years spent in upbuilding of these noble charities (State hospitals for the insane), reputation for scientific attainments, or for executive ability, which redound to the honor of the State, are of no avail against the clamor of the spoilsman." In the language of a progressive alienist and pathologist, "the rapidity with which progress is made in this country will be proportionate to the interest that is taken by the managers of every hospital for the insane in the matter of securing well trained men for the positions which are to be filled."

The more competent the physician, the larger the recovery rate, less the invalidism amongst the patients. The better qualified the officials who manage the business affairs, the less the waste and extravagance and the better and more satisfactory are the results to the people whose means go toward maintaining the establishment. In the employment of efficient officers and employes at a State hospital for the insane, the State makes an investment which pays large dividends. The converse of all this is true when unqualified ones are employed.

It has too often been the case that when a position was to be filled on the hospital staff that the individual next in line, or perhaps the oldest in the service, or may be the one having the best "pull" with the appointing power, was given preference over others less fortunate as to official rank or length of term of service, or extent of "influence," but who were more worthy, more capable, and in every way better fitted to fill the position. That policy which sanctions the promotion or appointment of the incapable along with the capable and making no difference in the com-

pensation of the worthy and the unworthy, the efficient and the inefficient, stifles high and laudable aspirations, and fosters laziness and indifference. The hospital that understands its own welfare will choose as its officers the best qualified, no matter whence they come and regardless of "regular order of promotion." This policy, it is gratifying to state, has been adopted by the best managed hospitals, and maintained by strong independent managers and superintendents to the betterment of their institutions. In New York promotion in the medical staff is based upon civil service examinations, which, it would appear, is a just and proper system.

Our country might well follow the example of France, than which there is no country which has advanced more in the care and treatment of the insane or can claim more celebrated alienists. There vacancies on the medical staff are filled after competitive examination, and once in the service one usually continues. The physicians are paid good salaries and provided with handsome homes. In most of the States the compensation of competent medical officers are not commensurate with the amount and the quality of the work done by them.

To quote from the Journal of Insanity, April, 1902: "The State forces its physicians on the patients who are deprived of their choice by law and disease, and the State must, therefore, see to it that its institutions are capable of carrying the burden of this serious responsibility."

A strong editorial published in a late issue of the Journal of the American Medical Association, on "State Supervision," closes in these words: "Above all, the appointments in the asylums must be made on a basis of merit, with the permanency which is found in similar positions abroad, and which is the *sine qua non* of good service. These limitations the politicians must respect if the care of the insane in America is to keep pace with the general advance of humanitarian efforts."

"Politics is apparently slowly though surely being eliminated from our State institutions." It is a good sign of the times when such a report as that comes from Kansas, where phenomenal improvement has been made in recent years in the standard of care for the insane and other defective classes. A State hospital for epileptics, sane and insane, costing about \$500,000, has been recently opened.

Though from time to time a critic appears in opposition to that system of hospital management which places the entire hospital under the control of a medical superintendent, acting under the general control

of a board of directors, that system has, after the test of many years and under varying circumstances, proved to be the most efficient. In support of this system, Conally says: "Considering the various education of men of different professions and ranks, none would seem so likely to be fitted by their diversified studies, and by the practical application of them to the preservation of the health of men and women, to undertake the mental, physical and moral government of lunatics and lunatic asylums, as medical men." The dual system—a physician at the head of the medical and a layman at the head of the business affairs, has never been a success.

Speaking of hospital organization and management, Dr. G. H. M. Rowe, Superintendent of the Boston City Hospital, truthfully says: "After all that can be said, when we come to the vital point of hospital organization and management, whether the executive be strong or weak, whether the staff is distinguished or mediocre, whether the funds are ample, or barely sufficient for producing fair results, the ranking of a hospital amongst its kind and class depends upon the character, efficiency and determination of its managing board more than on any one thing; just as the success of any corporation depends on its directors. Do we unduly magnify our office if we modestly assert that the best of boards would avail little, unless it has a superintendent wise enough, strong enough and faithful enough to execute, to uphold and to bring their plans to full fruition, so that the hospital shall not fail in accomplishing what the community has a right to expect of it?"

Considered from the standpoints of expenditure of public funds, accumulation and custody of valuable property, construction of public buildings, care of the afflicted, and protection of the rights of the helpless individual, the insane constitute the largest single element the State has to deal with. In the different States of our country the public care of the insane is managed in different ways. There is the exclusive county system, the county poorhouse and the State hospital systems combined, and the exclusive State care method, which is by long odds the most efficient as it insures the best supervision and maintains the closest official inspection of the institutions and the inmates.

Factors of no little importance in developing a wholesome interest in the humane care of the insane as well as all other defects, are conferences of charities and correction—State and National—and State Boards of Charities. These organizations arouse general public interest and pro-

cure information and diffuse knowledge hard to do through any other agency. Virginia has a State Conference and North Carolina a Board of Public Charities, each of which is doing noble work.

There should be maintained a broad, liberal policy in the State care of the insane and in the management of the hospitals; and a hearty support of high standard medical work. Generous appropriations are necessary to give ample and proper care and treatment to all the insane. It is said in truth that the degree of civilization of any country is measured by the liberality with which it deals with the dependent classes.

The greatest of modern psychiatrist, Emil Kraepelin, of Germany, says: "To stand still is to fall behind! In the conduct of the affairs of an asylum the pressing demands of the day do not allow us to rest upon the laurels which we have already won. New questions arise and the solving of old problems constantly demands new expedients. The needs of the care of the insane have grown to an extent which compel us to discover ways and means by which the evils can be met most efficiently. Pre-eminent in the fore-ground must stand the education and the maintenance of a capable and trustworthy class of alienists, since this class alone is able to weld and wield the weapons in the battle against the march of insanity."

While Hack Tuke's bitter criticism on the care of the insane in this country and Canada wounded our American pride, perhaps, and in later years Dr. Weir Mitchell's arraignment of methods of hospital administration usually in vogue was not received too graciously, our ambition for the attainment of higher and better things was probably just a bit stimulated. Still, despite such criticism, progress was inevitable. "Progress," says Dr. Meens, of Gheel, "is a general law of life, and whoever does not adapt himself to the conditions of the times is threatened with ruin."

Psychiatry, the youngest of the medical sciences, is yet in the transitional stage. "The period of scientific study, rational treatment and prophylaxis" of insanity, however, is well advanced. Under the leadership of the famous teacher of Heidelberg, radical changes are being made in the clinical study of the psychoses. The older classification, based upon symptom presented at any given time, is being supplanted by a classification based upon the broader view of the entire clinical history and course of the cases.

Psychiatrists of to-day, according to an eminent authority, are divided into two schools: To one school belong those

who depend chiefly upon the pathological findings as a basis for classification; to the other belong those who rely upon clinical observation at the bedside and elsewhere.

It is of interest to state that about sixty years ago Griesinger, the greatest alienist of his day, aided by Virchow, the acknowledged head of exact medicine, "first established the diagnosis of diseases of the mind upon an exact basis of scientific research and sound pathology."

Fifty years ago the medical staff at the State Hospital at Utica, N. Y., recognized the importance of special investigation into the pathological conditions existing in insanity, but only in very recent years did special and general interest begin to develop in this study. The pathological and bacteriological laboratory was quickly recognized by many as a necessity to accurate knowledge in correct diagnosis of the physical diseases constituting the underlying causes of insanity, as well as a stimulus to the medical staff to attempt and carry on original research with the purpose of gaining more definite knowledge. Well trained and skilled specialists have been the natural outgrowth of this progressive policy. While comparatively little of practical value has yet been discovered bearing on the morbid anatomy of the brain in the acute psychoses, (for great scientific truths are of slow growth), the future is full of promise. The pathology of the chronic and non-recoverable cases has been demonstrated. It must be remembered that within comparatively recent years all that we know about cerebral pathology and localization has been discovered, that microscopic appearance of both normal and abnormal tissues have been accurately studied and illustrated. It is, however, says a learned authority, on chemical lines that the greatest discoveries of the future will be made. Physiological chemistry has come in as an aid to the explanation of the relation between toxæmia and insanity. This theory is attracting wide-spread study. One distinguished English alienist, Dr. Ford Robertson, goes so far as to declare it to be his opinion that all forms of insanity in normal personalities are toxic in origin, the toxæmia having been established before the mental cataclysm occurred.

There has been a growing tendency to more accurate clinical observation of the patients and to individualism in treatment. Thorough physical examination, and also microscopic examination of the blood, the secretions and excretions, a correct record of the mental and physical symptoms and the treatment in each case, are matters that few of the hospitals caring for the insane neglect.

No paper containing a sketch of the growth of psychiatry—not even a rambling sketch, such as this is—would be complete without mention of the New York Pathological Institute, established for and maintained in the interest of, the State hospitals, and the original work done there from its organization several years ago to the present time, first by Van Gieson and afterwards by Meyer, who is now engaged there in scientific researches destined to enlarge greatly our knowledge of the aetiology and pathology of insanity, as he is working along the most advanced lines. Connected with the institute is a clinical service conducted for the purpose of teaching and research in which the physicians from the various institutions are trained in all matters that aid them in their medical work among the insane.

Fain would I speak, had I the time, of the medical remedies and the surgery now usually employed in the treatment of the different forms of insanity. Suffice it to say that each case is a study unto itself and is treated on known scientific medical principles. There is no specific for any of the many types of psychoses. More, perhaps, than in other diseases, has the physician to examine closely into the condition of all the organs to ascertain if possible any existing morbid condition, make a complete physical examination, and to study the conduct of the patients, as guides to proper treatment. Efforts are made to bring into use a comprehensive knowledge of physiology, chemistry, bacteriology, pathology and physical diagnosis.

Probably the foremost American psychiatrist says: "The sick insane person should be studied from the point of view of general medicine. The general physician in his clinical work must begin with physiology and recognize symptoms as disordered activity. Then comes the search to explain the functional derangement by interferences and possible structural changes. But the great modern progress in physiology is emancipating it from anatomical conceptions, and methods of teaching have wholly changed. You cannot deduce function from function; you must study function as function, especially in psychiatry, and physiological chemistry underlies both structure and function. Mental physiology is but one branch of general physiology, and chemistry is subsidiary to all physiology." The addition to the regular corps, of internes—recent graduates from the medical schools—to aid in the medical work, keeping of histories, and the like, is a step forward. By this method the older members of the staff are kept in touch with modern medical and surgical teaching at the schools,

and the younger men are being educated to a practical understanding of the nature and treatment of insanity, as well as general diseases and, to a considerable extent, surgery. The interne and the trained nurse have been important factors and are destined to be of even greater importance, in the advanced work in clinical psychiatry, by making a more careful study of the patient's history and symptoms possible. In many of the hospitals it is required to have on the staff a female physician whose special duty it is to ascertain by examination the existence of, and to treat "diseases peculiar to women." The South Carolina Hospital, one of the North Carolina and two of the Virginia Hospitals, have female physicians on their medical staff, one at each hospital. It must be admitted that the medical work in our hospitals is too frequently handicapped by a lack of sufficient number of physicians on the staff, and of equipment necessary for exact diagnosis and treatment.

In order to make the medical service more effective and secure for the patient the best possible treatment, there is in some of the hospitals in proximity to large cities, a consultant staff, composed of skilled specialists in the several departments of medicine and in surgery. A dentist, too, is sometimes attached to the staff. This is eminently proper, as the resident staff enjoys thereby the opportunity of professional contact with the profession at large, while many of the latter enjoy the advantage of becoming more familiar with the psychoses in all stages of development. The patient is, however, the chief beneficiary.

Kraepelin says: "Scientific observation and experience form the firm foundation upon which the whole question of the care of the insane is based. It has become more and more the duty of the State to foster scientific investigations in the hospitals for the insane. In this respect psychiatry has long enough been treated as a step-child. Although our old asylum physicians afford brilliant examples of what can be accomplished with very inadequate means in the attainment of high scientific ideals, the State has only recently recognized that a healthful progress in the care of the insane is not possible without a continuous development of scientific work."

In one branch, so to speak, of psychiatry it cannot be claimed that pace has been kept with the views of the best authorities. I refer to expert testimony before courts of justice. A renowned insanity specialist does not miss the mark far when he says that there is a widespread simple-minded ignorance which assumes that even a non-expert may give an opinion on mental dis-

eases without any more ado. The views of alienists and those held by lawyers and the courts are so much at variance that it is with great reluctance that conscientious and competent insanity experts testify. For a long time leading alienists have contended that where a question of insanity is involved the expert witness should be placed on a higher plane than that of an ordinary witness or a partisan witness for the defense or for the prosecution. In New York State, through the efforts of the medical profession, a bill was introduced in the legislature a few years ago, and I believed passed, providing for the appointment by the State or the Court, of a commission of medical experts in any case, to be paid not by one side or the other, but by the county or State, and to act in an advisory capacity to the court. In no other way, seems to me, is it possible to attain always unbiased and scientific expression. Expert testimony is frequently necessary, but the usual method of procuring it is, to my mind, not in keeping with the state of advancement in knowledge of the nature of insanity.

The earlier insanity is treated the better are the prospects of recovery. Seventy-five per cent of uncomplicated mania, melancholia primary dementia, manio-depressive insanity, other curable forms of insanity, will, under proper treatment recover within six or eight months from inception of attack. But the later mental symptoms are recognized and the longer the proper treatment deferred less are the prospects for recovery. Delay in treatment is probably more disastrous in insanity than in any other diseased condition. Statistics show that in more than fifty per cent. of all cases of recovery, whether temporary or permanent, the duration of insanity has not existed longer than six months. The recognition of these facts has led to the adoption of means by which insanity in its very incipency may be given suitable treatment. Voluntary entrance or commitment to public and private hospitals, insures this, in a measure. By this method a patient, manifesting symptoms of mental aberration, may personally, or through friends, secure treatment in a hospital without the necessity of a formal legal commitment, which, in the public mind, carries with it a certain stigma. As to voluntary commitment, it is of course, necessary to throw ample safe-guards about the patient, to prevent abuses of any character. As to legal commitment, the decided tendency in recent years has been to as much simplicity as possible, but not at the expense of safety to the patient's personal rights. A proper medical examination and a certificate as to the mental symptoms and

an order of commitment, in prescribed legal form, made by a judge or a justice as the representative of the law, constitute the essential features of the process.

Notwithstanding the acknowledged efficiency of modern institutions for the insane, there still remains such an ill-founded prejudice against them that they are made usually the last resort, certainly for the well-to-do. During the past fifty years, however, many misconceptions of insanity have been cleared up, and the old-fashioned mistrust in hospitals for the insane has largely disappeared. Years ago asylum scandals were more or less common and were given sensational publication in the press, to the gratification of a morbid desire, but as improvement in every department of hospital management and care of the insane came, just so rapidly came well-merited confidence of the general public in the institutions. Sending one to the hospital is often deferred till the disease has become chronic and perhaps incurable. How to secure the earliest possible treatment is one of the practical problems confronting us. Apart from the medical point of view, there is an economic consideration, in that the delay in treatment is often responsible for chronicity or incurability. The average time which an incurable case of insanity lives is about ten or twelve years, being somewhat longer in the whites than in the negro. A simple mathematical calculation will show the cost to the State or the family of maintaining such a charge, to say nothing about the patient's own loss of productiveness and usefulness in the community. "From the most practical standpoint" says an authority, "one will come to the conclusion that the burden of the insane upon society can be reduced to a minimum if the patients are committed to an institution as soon as they are in need of treatment, or become dangerous. In this way not only is the possibility of cure increased and hereditary transmission of insanity, lessened, but at the same time the number of deeds of violence is lessened." It will hardly be denied that the increase in the number of the insane is relatively greater than the increase in population. One of the surest means of preventing this constant increasing is to be found in early treatment under the most favorable conditions.

A crystallization of sentiment and effort has resulted in the establishment in the neighborhood of large cities, of reception or psychopathic hospitals for acute cases and those on the "borderland" of insanity; and in the establishment of chairs of psychiatry in medical colleges and psychical clinics in connection therewith. In different parts of the world, especially in Germany, where

there is a clinic of this character in connection with nearly every university town, advances in this respect have been made. There progress in the scientific study of psychiatry has been materially aided by this course.

In the United Kingdom psychiatry has received special recognition at many of the foremost medical schools. Arrangements are made by which clinical instruction is given to students by a lecturer on "psychological medicine." In some universities of London the medical degree is not conferred upon a graduate until he has passed satisfactorily a rigid examination on "mental physiology," by which is meant, according to a recent number of the *London Lancet*, "normal psychology and psychological medicine."

As Pinel, more than one hundred years ago forecast the modern humane hospital for the insane, so Griesinger over thirty-five years ago outlined the modern clinical institute for the acute insane, which is now developing psychiatry to its rightful place among the medical sciences. Earnest co-operation between the hospital and the clinical teaching of medicine enables us to better discover the causes which produce insanity and to acquire more definite knowledge which produces constantly improving ways and means of preventing and curing this "great enemy which wrecks the minds of so many millions."

A very distinct advantage in the psychopathic hospital, or the pavilion in connection with a general hospital, is that cases are received as they are in a general hospital, thereby doing away with the usual process of legal commitment. Many a case would be sent to such a hospital as soon as the first symptoms of impending alienation appeared, while comparatively few are sent, as already pointed out, to the "asylum" until symptoms are far advanced. Another advantage lies in the opportunity afforded of distributing among the general profession a better knowledge of the psychoses and the management of the insane.

Treatment of cases presumably transient in nature, or in the acute and curable stage, in special wards of a general hospital, has its advocates and it has its advantages. Dr. T. S. Clouston, of Scotland, has made a strong plea for this method, contending among other things that a patient treated in a general hospital is not apt to lose social prestige and business standing.

Says Dr. Henry M. Hurd, one of the editors of the *American Journal of Insanity*, and Superintendent of Johns Hopkins Hospital, Baltimore: "It is to be hoped that there will grow up in every city a detention hospital—not a detention ward, but

a well equipped hospital—with facilities for classification, for the reception of all cases of insanity in the dependent or semi-dependent classes, to which could be sent all recent cases of insanity for observation and study. Some of these patients being cases of ephemeral excitement or of delirium or alcoholic or other habit cases, might soon regain self-control and return home without being committed to institutions for the insane at all. The majority, however, would probably require to be transferred to such institutions."

Psychopathic wards in general hospitals may meet very well the requirements, particularly if such wards are in connection with a medical school, where they would also be of inestimable value to students. In a large hospital in Pittsburgh, several wards are devoted to the treatment of incipient cases of mental alienation; and in connection with the Pennsylvania Hospital for the Insane, at Philadelphia, there has been maintained for several years past (since 1885) an out-patient department for cases of insanity in the early stages. This was, it appears, the first out-patient or dispensary department for mental cases established on this side of the Atlantic. To Dr. John B. Chapin, a distinguished Philadelphia alienist, belongs credit for this initial advance step. In 1897 there was established in connection with the Boston Dispensary a department for incipient cases of insanity. It goes without saying that it is necessary to have in charge of such department a physician who has special knowledge of insanity.

In connection with a large general hospital, at Albany, New York, a distinct department or "pavilion" for mental cases, has been in successful operation two years past. Here emergency cases under commitment are comfortably cared for and properly treated by expert alienists during a few days pending transfer to a hospital exclusively for the insane. This is infinitely better than putting them in jail or guarding them at home. Here too, cases in the incipency of insanity, those suffering from acute delirium and transitory mental derangement, the "border-land" cases and the like, find a suitable refuge. Dr. J. M. Mosher, a skilled alienist, who is the attending specialist in insanity, says: "Rarely does a new enterprise command such immediate and unrestricted commendation. We may have builded better than we knew, and from the universal approval may take fresh inspiration for continuance and improvement of our work." Among the special advantages of the psychopathic hospital or ward is in the preventative features, cases being cured frequently before insanity is well established.

Formerly very few of the schools made any pretense of teaching psychiatry either by lectures or clinically. Apparently little importance was attached to it, and the young graduates went forth without the preparation to differentiate forms of mental diseases. But now in nearly all the schools of the highest grade, psychiatry is a part of the regular curriculum, and in many, clinics, sometimes in insanity are held at some hospital for the insane.

More than thirty years ago the "National Association of Superintendents of Hospitals for the Insane" adopted the following:

Resolved: "That in view of the frequency of mental disorders among people of all classes, and in recognition of the fact that the first care of nearly all these cases necessarily devolves upon physicians engaged in general practice, and this at a period when sound views of the disease and judicious modes of treatment are especially important, it is the unanimous opinion of this Association that in every school conferring medical degrees, there should be delivered by competent professors, a complete course of lectures on insanity, and on medical jurisprudence as connected with disorders of the mind."

It cannot be denied that the general practitioner is, as a rule, indifferent to the medical care and treatment of the insane. "This indifference," says Dr. John Punton, of Missouri, "is well understood, however, when we remember the hypothetical character of former available knowledge concerning morbid psychical phenomena, as well as the difficulties which beset its practical clinical application in general medical practice. Moreover, the numerous exigencies that belong to the care, management and treatment of the insane soon led the general practitioner to lose interest in its study, and all such cases were willingly referred by him to those members of our profession whose tastes or opportunities led them to select this form of practice."

There are other and potent reasons, for this indifference on the part of the general practitioner to the study of insanity and as how best to care for and treat the insane. The hospitals for the insane have been too exclusive. The hospital physician has, from uncontrollable circumstances, been forced to an exclusiveness which could but be hurtful to himself and detrimental to the development and progress of scientific psychiatry. There should be a closer relationship between the general practitioner and the physicians of our hospitals for the insane, for thereby both classes would profit and the cause of medical science be advanced. Moreover, a closer relationship between the alienist and the general practitioner and a broader knowledge of insanity by the latter who

first came in contact with the patient, when he manifest the earliest symptoms, would unquestionably result in more general and intelligent efforts at prevention and in more satisfaction in treatment.

I have read somewhere the following from some authority, probably Kraepelin: "It will be their (general practitioners) province to recognize dangerous symptoms in time, and by their action to prevent suicides and accidents, and obviate the short-sighted procrastination which so often keeps patients from coming under the care of an expert alienist until the time for practically useful treatment has long been past."

Surely it is the duty of the medical profession, especially of those physicians who are brought intimately into connection with the care and treatment of the insane, to create high and ennobling public sentiment, and, as far as lies in their power, blaze the way for the accomplishment of everything that tends to the betterment of the condition of those bereft of reason—the greatest physical misfortune that can befall man.

As Dr. Robert J. Preston, of Virginia, said in his presidential address before the American Medico-Psychological Association, in 1902: "The bright prospect looming up before us in the field of psychiatry, and the many ardent, brilliant workers now entering the field, intent upon elucidating the many vexed problems therein, gives promise in the future of splendid results."

In conclusion, let me say that while the evolution of the care and treatment of the insane has been slow, and the scientific study of insanity somewhat backward, "each year witnesses," says Peterson, "some new fact gathered, some new problem solved, some new hypothesis advanced, some new line of study indicated." "We are following the trend of human progress as it relates to this special work."

The Effect of X-Rays which Offers Possibilities of Therapeutic Applications.

W. D. Witherbee, M. D., Charlotte, N. C.

Looking at this subject in a general way an attempt will be made to classify the diseases and give so far as possible the effects the X-Ray has on the cells and the bacteria producing the disease.

The first group we might include the following: (a) Hypertrichosis; (b) Sycosis; (c) Farces; (d) Tenia Tonsuraus; (e) Tectia Barbæ. As one glances over this list the first thing noticed is that they pertain only to diseases of the hair and hair follicles with the exception of Hypertrichosis. These diseases are caused by micro-organisms which are deeply seated and for this

reason makes it very difficult to apply the various ointments and lotions so as to reach the infected area. In some of the more chronic cases in this group this method is most tedious and oftentimes discouraging. The X-Ray gets the penetration. The bacteriocidal action in living tissue assisted by its power of causing localized inflammation with the accompanying leucocytosis, also an early falling out of the hair which may possibly result in a permanent or temporary baldness depending on the severity and length of the treatment.

In the following group is included the diseases of the sebaceous glands causing either an increase in size, or an increase of the functional activity of the glands.

(a) Comedo; (b) Acne; (c) Acne Rosacæ; (d) Lupus Erythematosus? (e) Seborrhœa. The effect of the X-Ray in this group causes an atrophy and diminution in the functional activity of the sebaceous glands. The same may be said of the use of antiseptics in reaching the seat of the disease in these cases as stated in the first group.

In summing up these two groups a general rule might be applied that the X-Ray causes atrophy of all of the appendages of the skin. This would then include an atrophy of the sweat glands, making it useful in those cases where there is an increase of the functional activity of these glands and also causing an exfoliation of the nails, thus aiding in the treatment of ringworm of the nail.

In the next group is included those diseases where the destruction of bacteria in living tissue is indicated. Although this is a much disputed point clinically we see it most marked in Lupus Vulgaris. Whether the bacteria are destroyed by the X-Ray or Phagocytosis or by the changes produced in the cells themselves is not as yet definitely settled. Such a quality offers possibilities of the widest application in bactericidal diseases of the skin.

The stimulating action of the X-Ray upon the metabolism of the tissues offers another application especially in those chronic indurated conditions such as eczema, psoriasis, lupus erythematosus and lichen planus. Here we get the stimulating effect producing the necessary absorption of inflammatory products.

That the X-Ray has the quality of destroying certain pathological tissues has been demonstrated both clinically and microscopically. Clinically, a gradual diminution in size is seen, and complete disappearance of the mass. With the microscope it has been determined by taking sections from the tumor from time to time during treatment that there was a disintegration of the

pathological cells, and if the treatment is not too severe these are the only cells affected.

Therefore this opens the field for application of the X-Ray to carcinoma, epithelioma, sarcoma and tubercular conditions, because these are the diseases characterized by the multiplication and growth of embryonic and most unstable cells in pathological tissues.

The anodyne effect of the X-Ray is most marked in nearly every painful malignant condition, also in inflammatory conditions, and especially in neuralgia.

Hodgkins Diseases in some of the worst forms seems to yield readily to X-Ray treatment and some writers have reported good results in cases in leukemia.

From the above statements it can be readily seen that the X-Ray as a therapeutic agent is especially serviceable in those cases which have hitherto been to a large extent beyond the reach of drugs and surgery. In fact it is not uncommon to see cases which had had all the possible medical and surgical treatment with perhaps only temporary benefit and come as a last resort for X-Ray treatment, and be greatly benefited, and in some cases cured.

By the above statement I do not mean to infer that surgery and medicine are not essential in these cases, but I believe that the X-Ray used after operations for malignant diseases will prevent a great many recurrences and therefore diminish the percentage of return of the growth which at present is most deplorable. There are special instances in which the X-Ray treatment has so reduced the size of the growth and so improved the patient's general condition that operation was made possible.

Therefore one might conclude by stating that the X-Ray should be looked upon as a most valuable adjunct to surgery and a most promising therapeutic agent in the treatment of skin diseases, more especially in the chronic and malignant conditions of the skin, besides being a powerful anodyne and destroyer of some deep-seated malignant conditions.

The Therapy of Typhoid.*

By John Hey Williams, M. D., Asheville, North Carolina.

In the thoughts that I shall endeavor to present to you in reference to the therapy of typhoid, I shall not attempt to discuss its etiology or pathology except in so far as it may be necessary to elucidate the reasons for the use of any particular drug or mode of procedure. It is well enough to state that there are no known hard and fast rules

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for the elaboration of any special mode of treatment. No text book can teach us how to treat any individual case. As in tuberculosis, as has been so frequently and cogently urged on this floor, each case must be studied individually. The personality, the previous habits, vitality and special environment make up a totality upon which we base our treatment, and this treatment is more or less tentative. From year to year different features appear governed possibly by meteorological condition and changes in environment. The features presented in certain groups of cases last year are notably wanting in the cases appearing to-day, and we are studying the cases almost de novo.

We have learned that typhoid cannot be cured in the sense of jugulation by any antiseptic or other method. That it is a self-limited disease, the duration of which may be limited to a certain degree and its severity may be modified very largely. We can so conserve the vital forces of the body and so aid the natural processes of the economy that they may be able to make a successful fight against the invading foe. The patient may be kept in such comfortable frame that there may be little of which to complain, save the tediousness of the confinement.

The careful study that has been devoted in the last decade to the pathology of the disease has resulted in a more comprehensive idea of the principles of metabolism and catabolism involved and the causes of disturbance of the balance between these forces, and has largely served to modify and direct us in the selection and application of therapeutic measures. We have learned that typhoid is not a specific infection affecting Pyers patches alone and confined to the intestinal tract, but that there is an invasion of the entire economy by the Eberth bacillus. That in the greater number of cases presented to us the intestinal glands are infected is true, but that alone does not constitute typhoid. This being true it is evident that no known application of intestinal antiseptics will abort the disease, but by their use we may control to some extent the multiplication of the bacillus in the intestinal canal and the consequent absorption of the resulting toxins.

There are also other toxins in the body, the result of defective tissue changes and the presence of the bacillus in the various tissues and organs of the body. With these conditions we may best deal by looking carefully after the eliminations.

In fact elimination properly balanced by support in the way of carefully considered dietetics is the only plan or system that at all appeals to me and the means that best promote this system afford me the greatest satisfaction.

One of the best means to this end is the abundant use of water, both internally and externally. While I am an earnest advocate of the use of cold water, yet I must deprecate the harsh and barbarous procedure of the advocates of the full Brandt system. While it is frequently necessary to reduce abnormally high temperature, yet it is not always so and we must not get into the habit of thinking that high temperature is an unmixed evil. "Fever in toxic conditions is necessary and salutary because it is the result of intensified combustion and increased metabolism by which nature effects the expulsion of morbid elements." As Juettner concisely states, "those who fear fever commit the fundamental error of confounding fever and high temperature. The temperature is usually the manifestation of the fever." They are not necessarily proportionate. Disturbance of the heat controlling centers as in thermic fever or heat stroke will result in violent hyper-pyrexia, but this is not dependent upon a fever process.

There will and must be temperature when the forces of the body are engaged in this great struggle. It is only when the temperature is abnormally high, and that point I fix at 103.5 or over; (and even that is not high save by comparison) that the cold bath becomes necessary. Manges states that "the condition of the patient rather than the reading of the thermometer should be our guide." It is with me not so much the sudden drop of the temperature as the soothing effect upon the nervous system and heat centers and increased elimination by the skin and kidneys that is sought.

For a very full, lucid and comprehensive discussion of the cold water treatment, I commend to you a careful reading of the excellent article of Hobart A. Hare in his edition of *Practical Therapeutics*. The action of the cold should be carefully watched by a careful and competent nurse. When there is a profound shock to the system with enfeeblement of the circulation in the extremities, the cold bath is contra-indicated and the desired result may be obtained by sponging and packs with tepid or even hot water. I am of the opinion that it is not so much cold water as plenty of water that is needed. Dynamic cases with full bounding pulse, congested conjunctiva, deeply flushed face and restless delirium, will stand a greater degree of cold than the adynamic case, even though the temperature be higher. In addition to the use of water externally I greatly favor the giving of high enemas of cold or tepid decinormal salt solution in as large quantity as can be comfortably borne. While there may not be much effect in the way of

washing out the typhoid toxins from the intestine, yet the stimulating effect upon the kidneys is in some cases very great. I have seen one enema of two quarts raise the excretion of urine from 24 to 46 ounces in twenty-four hours. As a depurating agent I greatly favor the use of Acetozone. I give it in two-grain doses every four hours in a capsule with as much sub-nitrate of bismuth, to prevent the dilquescence of the Acetozone. I have found it to be a powerful diuretic; the best that I know in this disease; and in addition it has a decided effect as an antiseptic in the intestinal tract. It contains a large amount of nascent oxygen and there is a possibility of absorption of an appreciable quantity. In the way of intestinal medication I sometimes use the Woodbridge tablet No. 2, for convenience in prescribing. The small amount of calomel serves as a gentle fillip to the liver, helping largely in elimination and getting the anti-septic action of the guaiacol, menthol and thymol. The antiseptic treatment has largely lost favor with its early advocates from the fact that they were working upon a wrong hypothesis, thinking that intestinal absorption was the only source of the toxic poisoning. To quote Manges again on this point: "The absorption of typhoid toxins from the intestinal tract plays a less important role than does the general production of typhoid toxins in the blood, spleen, etc." To that I would add the toxins arising from defective tissue changes.

When I find that the use of the cold bath is contra-indicated by the failure of the capillary circulation even when aided by the use of moderate amounts of alcohol, I have no hesitancy in resorting to the use of Phenacetine in doses of from two to five grains with Caffein and Hyoscinum. In addition to its antipyretic action, it has a valuable sedative action upon the nervous system and promotes the free action of the skin. I have never had any bad results from it and feel that its use has been too much neglected by reason of the unfavorable results following the unskillful use of the coal tar products when first introduced. The condition of the heart should be carefully noted from time to time and signs of weakening of the first sounds should be met by the careful use of strychnia and digitalis. I am very partial to the use of the Boergraeve Granules of Digitalin and the Arseniate of Strychnia. I do not at all approve of the method of preliminarily bracing the circulation because we may need it after awhile. It partakes too much of the set and fixed routine and should be avoided by the thorough and painstaking physician. There is another condition of

the heart that demands attention and that is tachycardia of greater or less degree. I have had recently, two cases under observation in which the pulse stood for days at 140 to 160. There was with me a fear of myocarditis, as both endo and peri carditis could be excluded by physical examination. I resorted in each to the use of Norwoods *Veratrum Viride* in doses from four to eight drops every four hours p. r. n. The result was most happy in the reduction of the pulse-rate and tone and due solely to the veratrum as no other drug was used. In adynamic cases with dry coated tongue, sordes on the teeth and a considerable amount of tympany, I resort to the use of turpentine, both externally and internally. I regard this drug as a most powerful systemic stimulant and not, as my jocose friends would intimate, a cerebral stimulant. I have found other and better things for that purpose. With slow and feeble pulse, dry coated tongue, muttering delirium and tympanitic belly, I know of nothing that will compare with it. Turpentine is also possessed of marked antiseptic qualities and is somewhat carminative.

I have tried the carbolic acid and iodine treatment, which was a few years ago so highly lauded, but have been thoroughly disappointed with it. In fact, I have no treatment as such and mention these simply as exemplars of the endeavor to find some specific. The question of too frequent movement of the bowels has to be considered occasionally, and I make it a rule to let them alone unless they are so frequent as to distress the patient and interfere with other needed things. Should there be any necessity to restrain them I have found that *Betanaphol Bismuth* in from five to ten grain doses gives the best result. Should there be a condition of constipation, I give small doses of calomel, and if I do not have the proper result I favor greatly the use of castor oil and after a free purgation with this old and well tried remedy, I have frequently had a marked reduction in the temperature. In case of hemorrhage I have found the ice coil to the belly and a full dose of morphia hypodermically with ten drops of adrenalin chloride solution gives as good results as anything at my command. Turpentine in ten to fifteen drop doses, is also useful. It is of importance to know whether it is a hemorrhage from the ulcerated Peyer's patches, or whether it is an oozing of a disorganized purpuric blood through a disorganized mucous membrane. In one there is a fairly good chance of recovery if we can prevent recurrence. The other is hopeless and marks the near dissolution of the patient. Sleeplessness, if serious, can best be re-

lieved by the administration of ten grains of Trional, or better still, the new synthetic compound known as Veronal, in the same doses. In case of any idiosyncrasy where the drug is apt to produce any delirium, I have found Dovers powder in from five to ten grain doses to do all that is required. If there should be any great delirium with vigil, I resort to *Elix. Valer.* Ammonia in half ounce doses, and usually with the very best effect.

Care should be taken of the mouth and it should be frequently washed with dilute listerine or infusion of myrrh. I am satisfied that many of the cases of involvement and loss of the salivary glands might have been prevented by the prophylaxis of the mouth. Nausea may be best prevented or rather relieved by the use of cocaine muriate in doses of one-eighth grain with five grain doses of oxalate of cerium. Many cases of nausea may be due to the exhibition of full doses of digitalis. I have found that this drug is frequently very irritating to the stomach in some cases and cannot be tolerated. It may also arise from the deficient elimination from the kidneys. Close attention of these factors will frequently outline our treatment. Symptoms pointing to perforation should be at once referred to the surgeon. I am satisfied that a very large proportion of these cases may be saved by early operation. While it is true that this is a very serious complication, yet modern statistics give a very reasonable hope from early surgical intervention.

I favor the use of alcohol with my patients in this disease, and I give it freely as indicated. When the heart sounds are feeble and muffled and the condition indicates great depression, whiskey or brandy may be given in large quantities, and I advise that it be given for effect. Each case must be a law unto itself. I have found that in some cases four ounces will be quite sufficient, while in others I have found it necessary to give as much as from sixteen to twenty-four ounces in the twenty-four hours. There is a possibility that whiskey or brandy may not be acceptable to the stomach. In such cases champagne well iced will nearly always be well taken. With children I have found well made wine whey to be of great service, as it is both food and stimulant. The question of food is one that will interest us from the very beginning, and rightly so, as it is of vastly more importance than the question of drugs. Just here does the well-trained and experienced nurse enter the field. To her must of necessity be largely entrusted the preparation and administration of such food as will be best digested and assimilated and best suited to the wants of the

system. The general ideas as to the food may be suggested from time to time by the physician in charge, but the palatable preparation of it is in the hands of the nurse. Very few physicians give much attention to this question, and a thorough course with Mrs. Rohrer would be of service to all of us. It is impossible that there should be any fixed line of diet and it must be varied from day to day as may be indicated. A long list of foods is offered by most all of the writers on this disease from which judicious selection may be made. It must be borne in mind that the feeding must be liberal. In no disease is careful, regular feeding of more importance, for it must be remembered that we have before us weeks of exhausting illness. The feeding must be varied from time to time, as it is easy to satiate the enfeebled appetite and bring about an intense disgust for all food. Among the principal foods that time and usage have proven to be the best that we have, I shall mention, milk in any form, plain or with salt or lime water, Vichy or Apollinaris; peptonized or with white of egg; koumiss or buttermilk, wine whey, or sweet milk flavored with coffee or cocoa, which last should be used very sparingly as it often proves to be very indigestible. Among the animal broths I may mention, lamb or mutton broth, chicken broth or soup sufficiently concentrated to jelly on cooling. Bean soup thoroughly cooked has a very great amount of nourishment, in the form of the proteids, in it, but must be given with caution. Eskays food, malted milk, with or without sematose. Eggs soft boiled or jellied, raw with sherry, or the whites with lemon juice and ice, ice cream with but little sugar and Uneeda biscuit in the form of panada. I do not favor the use of beef tea as there is so little in it that is of real use, and there is so much to be said against it. It is a good culture medium and is frequently productive of foul, ill-smelling diarrhoea. I favor the use of animal broths only when there is no diarrhoea and the stools are of normal odor. I make it a rule to sweep out the bowels thoroughly with a good dose of castor oil if I find that any particular article has disagreed, whether there be diarrhoea or not. We must study to preserve the normal relation between the proteids, carbohydrates and fats so far as possible and have the results carefully noted. Just at this point I should like to refer again to the question of milk in the diet. There appears to be a general idea that milk is of easy digestion and that any amount may be forced upon our patients. There is no greater fallacy, and much harm may be done by forcing large quantities into an atonic stomach where there is an

almost total failure to produce the gastric juices and digestive ferments. I have known physicians to insist upon their patients taking from one to two quarts a day and I have seen in some of them the most disastrous results. There is in some cases an almost total failure to digest this quantity and large lumps of curds are formed which pass through the canal as so many irritants, with all the irritation that would be produced by so much cellulose. I would as soon give raw cucumbers. When there is this atony of the secreting cells of the stomach, I favor the exhibition of dilute muriatic acid with nux vomica and pepsin. Very frequently we may secure the best of results by this practice.

I have not spoken of the serum treatment of the disease as there is not as yet sufficient testimony in its favor. In fact, so far as my reading goes, the weight of testimony is against it.

I have gone over this matter rather discursively and have touched upon but few of the salient points. To cover the whole ground would be to write a book and I am sure that I have already exhausted your patience with the platitudes that are so familiar to your ears.

A resume of the whole, amounts to these points:

1st. A careful study of the individuality of the patient.

2nd. A recognition that facts and not theories confront you.

3rd. That the infection is general and not local. That the infection is specific, and as in the zymotic diseases has a definite course to run, and the best that we can do is to modify and direct.

4th. That there is no such thing as specific medication.

5th. That we treat the patient and the conditions as they arise and not the disease.

6th. That the problem that we have to solve is the conservation of the forces of the economy till the disease has exhausted its virulence, limiting so far as is in our power the destructive forces, eliminating their products and building up and restoring damaged tissues.

DISCUSSION.

Dr. T. E. W. Brown thinks Dr. Williams neglected the subject of hydrotherapy. By the use of the cold bath up to the 21st day a great many of the evils of the disease can be done away with, tympanitis can be prevented, bed sores prevented, the patient sleeps better and the action of the skin and kidneys is increased. Usually finds it necessary to use a bath of 70 deg. every three hours.

While statistics show that the percentage

of relapses has increased, Dr. Osler says we ought to be thankful that the patient is saved for a relapse. Believes in the systematic use of whiskey in moderation as long as the skin keeps moist and patient is comfortable. Cannot see how one who reads statistics fails to be impressed with the value of the Brandt system and can keep from following it as closely as possible, the death rate in those hospitals using it having been lowered 50%. Should be very careful in the use of milk on account of clot formation.

Dr. Brown thinks favorably of turpentine, internally and externally, condemns the use of serums, and while not deprecating the use of intestinal antiseptics would advocate use of certain drugs possessing antiseptic action in urinary tract.

When the temperature continues during the fifth week and longer, it is necessary to get the patient out of bed and give something more than liquid diet before improvement begins.

Dr. Dunn: Emphasizes the use of baths in those cases where they are indicated. Nothing will so favorably affect the cases of nervous tendency as bathing. Dr. Dunn himself was cured of a typical case of exophthalmic goitre of several months duration by a typical case of typhoid, hence his friendly interest in it. Does not think we should condemn the use of serums out of hand, but should continue to study the matter, even though the prospects of ultimate success on this line are not very bright. Does not agree with Dr. Brown that one should overlook intestinal antiseptics, even though it does not play the part it did a few years ago.

Dr. C. E. Reed: Agrees with Dr. Dunn that we should attack the bacillus in the intestines as well as in the urinary tract. Thinks favorably of the Brandt system; where it cannot be carried out fully, uses sponge baths with cold or tepid water, does not believe that the result to be sought is so much the reduction of the temperature as the soothing effect upon the nervous system.

Dr. Reed believes that milk is our best friend and holds that feeding of patient with an abundance of easily digestible and assimilable food is of the utmost importance but should be regulated with the greatest care.

Remarks on Empyema. *

By L. Sexton, M. D., Professor of Minor Surgery, Tulane University, New Orleans, La.

Empyema, or purulent pleuritis, is of more common occurrence than most physi-

cians imagine; in fact it is the cause of many deaths attributed to unresolved pneumonia, where the lung it is claimed fails to clear up, or pressure from pleuritic effusion causing heart failure. I have heard these explanations given when the entire matter could have been cleared up by a simple puncture with a large hypodermic needle. The usual causes of empyema are (1) the degeneration of sero-fibrinous pleuritic effusion which, even when it clears away, contains some corpuscular element which increases in number, especially if a non-aseptic thoracentesis has been performed, rendering the clear serum of a milky color which latterly turns to pus. (2) Empyema also follows scarlatina, pneumonia, tuberculosis, and all the eruptive fevers, and again its cause may be traumatic through the chest, as the fracture of ribs or penetrating wounds, either stab or gun-shot. The usual bacteria found are the staphylococcus and streptococcus and tubercle bacillus; the pneumococcus is usually found after pneumatic cases. If, after any of these conditions enumerated above, we have pains, cough and expectoration with dyspnea, with diurnal chills and paroxysms of sweatings, dullness on percussion which changes with upright position, absence of vesicular murmur, a bulging of the intercostal spaces, with tendency to lie upon the affected side, all these conditions point either to pleurisy with effusion or more likely to empyema. The only positive method of determining which it is, is by exploratory puncture, which when done with an aseptic needle or trocar is usually harmless and painless as well, especially if preceded by an injection of cocaine or chloride of ethyl spray. Floculi or fibrin often block up the end of the needle so that a pleural cavity full of pus may give a negative result, or if the pus is very thick it may fail to be drawn through a small needle, yet as a rule we do not have much difficulty in establishing our diagnosis even with the large hypodermic syringe and needle. The prognosis in these cases is usually grave but the outlook will be modified by the character of the bacilli and early diagnosis, with the thorough drainage of the cavity. Age again modifies the prognosis, as the prospects among children are much more favorable than among adults. Phthisis pulmonalis, pericarditis, peritonitis or septicemia, when complicated with empyema, as a matter of course add to the gravity of the situation very materially. Again, left-sided empyema is much more fatal owing to involvement of the pericardium or displacement of the heart. Out of six hundred and fifty-six cases collected by Weightman in English hospitals, among

*Read before the Mississippi State Medical Association.

children over three years of age, sixteen per cent. proved fatal under the most approved treatment, including drainage and rib-resection when indicated. The same statistician found the mortality to be fifty per cent. in children under three years of age; the mortality rate was very large in old people. The treatment of empyema is purely surgical. An early diagnosis with free incision and drainage is the teaching of all competent men. The variety dependent upon the pneumococcus may possibly be cured by aspiration or absorption, in fact such a course has been recommended of late by some French writers; but the question naturally arises, why risk a life upon the name of a germ when we know other simple methods will almost surely afford relief. Our plain duty in all cases of empyema, as in an abscess, is to remove the pus and keep the drainage free, to secure expansions of the lungs, and to prevent deformity. Aspiration should only be relied upon as a temporary make-shift in urgent cases with effusion upon both sides and when the fluid is sero purulent. Even if aspiration be often repeated there is frequently left in the pleural cavity cheesy masses and flocculi of fibrin which cannot be removed by the aspirator. A large size trocar and canula which fits the aspirator should be used if we aspirate, in preference to the usual sharp pointed needle which might inflict unnecessary damage upon the lung or pleural membrane if inserted too far. The fluid is sometimes syphoned away by slipping a rubber tube over the nozzle of the trocar, allow it to fill with fluid and placing the lower end in a basin of sterilized water. In children it will be found that usually there is plenty of room for drainage between the ribs, without having to resort to resection of the rib which adds materially to the shock of the operation besides opening the cancellated structure of the ribs, making pyaemia and necrosis more probable, adding the further risk of a general anaesthetic. If the interspace between the rib is not large enough to permit free drainage, resection then becomes necessary; but we usually gain sufficient space by increasing the length of incision between the ribs, putting in two or three larger rubber tubes, one inch long, held together by a safety pin. These tubes should not extend far into the pleural cavity as they irritate the lung if too long, or much beyond the chest-wall externally as they prevent the dressing from lying smoothly if too prominent. It is time to remove the tubes when the discharge changes from purulent to a serous fluid and become very scanty in quantity. This may be the case in from ten to twenty days but oftener it takes as many weeks.

The opening may be kept from healing after the tubes have been removed by a slight packing with iodoform gauze. In operating upon a child under three years of age a single large drainage tube is usually sufficient, but two, and sometimes three, of these tubes is necessary in adults. The pleural cavity can be more completely emptied by frequently turning the patient upon the affected side, thus causing the fluid to gravitate towards the opening and to be discharged more freely during efforts at coughing. The patient should be encouraged to sit up if strong enough to do so at the end of the first week. These cases are rather slow in convalescing. The average length of time usually runs from seven to eight weeks, but many are much more protracted. This is usually the case where the cause is tubercular or where debris or large coagulæ are found in the pleural cavity. Under such circumstances the incision should always be made larger and this detritus removed by gently douching the chest cavity with sterilized water a little above the normal temperature of the body. This procedure with efforts at coughing will usually wash out these foreign substances. Irrigation of the pleural cavity cannot be resorted to with impunity as fatal collapse has followed this procedure. No antiseptic or disinfectant should be added to the douche, unless the discharge is particularly offensive from gangrene of the lungs or decomposition of the pleural membrane. Under such circumstances mild solutions of boracic acid or bichloride of mercury, one to ten thousand, may be employed, but an injection of sterile water should follow. I have recently operated on two cases of empyema following pleuro-pneumonia, or grippe-lung, following out the plans indicated in the preceding remarks, with results eminently satisfactory. The temperature in each case ranged from 103 to 104 deg. F. with all the physical signs of empyema. After spraying with ethyl chloride, or injecting the local anesthetic, the side was given a thorough antiseptic scrubbing with bichloride solution, the tubes and instruments were also rendered aseptic by thorough boiling, and an incision was made about two inches long in the sixth intercostal space, in the axillary line. The skin was pulled up, so as to form a valve-like opening after the tubes had been removed. The index finger was pushed into the incision to determine whether the rubber tubes would be collapsed by rib pressure or not. The pleural membrane was opened for about an inch and a half, when about one quart of pus flowed very freely, spurting out in jets after each effort at coughing. The cavity was kept as thoroughly empty

as possible by encouraging the patient to lie on the affected side. The wound was then covered over with iodoform gauze and several layers of absorbent cotton to take up the fluid, which layer of cotton were changed as often as necessary. These cases had a fall of temperature from 103 deg. Fh. to normal within twenty-four hours after the operation and made an uneventful recovery after three and six weeks confinement. We do not mean to reflect upon those who advocate rib-resection in order to get freer drainage in adult cases. In fact, we rather think it indicated in many cases where the drainage is not entirely free, but in younger subjects, and especially in children who are very often much shocked by the operation, we rather incline towards the use of the drainage tube than to the more formidable operation. It has seemed to me that the teaching of many of the text books has been too radical in regard to immediate resection of the ribs in nearly all cases of empyema. As a matter of course, we know free drainage is imperative in all abscesses, but it does not necessarily follow that you cannot get this by opening the sixth or seventh intercostal space, by making the incision longer between the ribs, and having the rubber drainage tubes large. The sharp edges of the cut ribs, the bleeding from the intercostal artery, the shock and general anaesthesia all argue against rib resection unless the lung has been permanently retracted by the pressure from the fluid and there is a large amount of dead space, when either Eastlander's or Scheede's operation may become necessary. One thing that has convinced me of the evils of rib resection has been the numerous cases of sinuses I have seen in the hospital clinic, due to necrosis after resection. I think counter openings equally unnecessary if the first incision is at the lowest point for drainage and large enough; there is rarely any indication for but one opening. In the month of January, 1902, I was called to see a little patient, about six years old, who had been suffering from lagrippe and its effects, for six weeks. I was the fourth doctor in the case and found the patient very much spoiled from his long spell of sickness, and having his own way. The temperature was 103 deg. Fh, sweats profuse, respiration 36, pulse 120. The little fellow was so irritable that it was almost a physical impossibility to auscultate or examine him. After stripping him I saw the respiratory act was confined to the right side, also that the intercostal spaces were less marked on that side. Breath sounds were absent. Flatness was complete. I recognized at once that the pleural cavity was filled, and suggested

that drainage be established at once. It was with some hesitation that I got the consent of the parents to operate. After aseptically cleansing and cocainizing the side, I made puncture with trocar needle between the sixth and seventh ribs in the axillary line. The pus came through before I could attach the syringe. I used the needle as a guide to enlarge the opening with a knife, when one quart of pus escaped. The lung was compressed into a small space in the upper portion of the thorax. The child was not shocked by the incision, which was painless. A medium sized rubber tube was inserted, with safety pin through one end to keep it from slipping into the cavity. A large pad of absorbent cotton was placed over the tube; a bandage was thrown around the chest, and within twenty-fours the fever was gone. As the lung expanded I cut the tube shorter until it was finally forced out. I did not irrigate, just drained. The result was perfect within three weeks. In children, and where there is free space between the ribs, I do not think resection required.

That these cases of empyema occasionally cure themselves by spontaneous rupture into the bronchial tubes is evidenced by the following experience. Some time ago I was called in consultation in the case of a little girl who had empyema following a pneumonia with pleurisy. For weeks she could only rest lying on her affected side or in the sitting-up position. The intercostal spaces were bulging and all respiratory sounds lost in the left side. The parents were afraid of an incision but finally consented, and while the preparations for the operation were being made the little child in a violent fit of crying and coughing ruptured the empyema into one of the bronchi, expectorating large quantities of pus for the following two weeks and making a rather slow but complete recovery, though she was very weak from the septic condition for several months afterward.

Uncinariasis, or Hook-Worm Disease in Georgia. *

By Claude A. Smith, M. D., Pathologist to Grady Hospital; Demonstrator of Pathology and Bacteriology, Atlanta College of Physicians and Surgeons; Professor of Pathology and Bacteriology, Southern Dental College; Pathologist to Georgia Pasteur Institute; Secretary Anatomical Board of Georgia Atlanta, Ga.

Uncinariasis, ankylostomiasis, or hook worm disease, has undoubtedly existed in Georgia for a great number of years, and in looking up the subject we find reference in

*Read before the meeting of the Georgia Medical Association, April, 1904, Macon, Ga.

some works to its existence in the South, in the past, but we are unable to find authentic reports of cases occurring in Georgia.

In the light of our present knowledge I feel sure that the disease has existed all along, but simply has not been recognized.

In December, 1901, the writer, while making a postmortem examination of a case at the Grady Hospital, found a great number of the parasites in the small intestines of a negro. There was some difficulty in tracing the history of this case, as the man was sent to the hospital from the city stockade and had no friends in the city. Upon investigation I found that he had been reared in Florida, and had never been out of the South. Upon ascertaining this I naturally came to the conclusion that the disease must be endemic, and that there must be other cases in the South.

As the disease was commonly supposed to exist among those who worked in damp clay, through the courtesy and kindness of Dr. S. H. Green, of Bolton, I was enabled to make an examination of the stools of 20 convicts who worked in the clay pits at the convict camp on the Chattahoochee River, near Atlanta. Out of the twenty cases examined I found the eggs of the uncinaria in two. These examinations were made in January and February, 1902, immediately after finding the first case.

These cases were the first seen in Georgia, of which there is any authentic record. Since that time any number of cases have been seen from different sections of the State, and it has been my fortune to see cases from all of the coast States from Virginia to Texas, with the exception of Mississippi.

In Georgia (and this applies as well to the other Southern States) the disease is far more common than the physicians suspect.

When I first encountered the parasite I presumed that it was identical with the old world *ankylostoma duodenale*. To Dr. Stiles belongs the credit of first pointing out that the parasite in the South is a separate and distinct species from the old world parasite.

After reporting these first cases at the meeting of the American Medical Association, in June, 1902, I received a reprint from Dr. Stiles of a short article entitled, "A New Species of Hookworm (*Uncinaria Americana*) Parasitic in Man," read by him just a month previously at the meeting of the American Gastroenterologic Association, and in which he reported receiving specimens from Virginia, Texas, and Porto Rico, which he had differentiated as the new species. At the same time he wrote me requesting specimens from my cases to see whether they were similar to

the other specimens he had received. After receiving the specimens from me he replied that he had found them to be identical with the specimens from Virginia, Texas, and Porto Rico, and which he had named the *Uncinaria Americana*.

Distribution and Prevalence in Georgia.—From observation and investigations of the conditions under which the disease exists and spreads, I feel sure that I am perfectly safe in stating that the disease may be found in every county in Georgia. I do not believe that there is any section of any great extent that is free from it. It seems as if the entire country was literally saturated with it. It is found in the highlands as well as in the lowlands, on the mountains as well as on the seaboard.

Dr. Stiles seemed to be of the opinion that the disease was confined to the sand belt, as in some correspondence between us he wrote; "The disease undoubtedly follows the sand." Some of the most severe cases I have seen were up in the mountains of North Georgia.

That we find more of the extreme cases in the sand belt I believe to be true, and I presume Dr. Stiles was misled because the extreme cases were found so readily in the sand belt. That the disease is more common in the sand belt is due to the fact that the conditions are more favorable there for the development of the parasite.

Symptoms.—No one set of symptoms can be put down as diagnostic of the disease, as they vary with the amount of infection and with different individuals.

For convenience I have classified the disease under three types: First, mild cases, which have had only one or two attacks of ground itch, and therefore have only a small number of the parasites in the intestines, not sufficient to produce any diminution in the corpuscles or hemoglobin. Second, the medium type of cases, which have had two or more attacks of ground itch, and have a much larger number of the parasites in the intestines, sufficient to produce a reduction of the corpuscles and of the hemoglobin, but which is not perceptible upon inspection of the patient, but is readily shown by the blood examination. The third, or severe type are those cases about which so much has been said in the past, and which have had numerous attacks of ground itch, and usually have several hundreds of the parasites in the intestines, and present all the symptoms of extreme anaemia which is readily recognized without the blood examination, and which is often times so great as to interfere with the development of the individual.

We cannot draw a sharp line separating these three types, but I make this classifi-

cation for the sake of convenience in considering the prevalence of the disease, and also to draw attention to the fact that those cases which can be suspected from the symptoms of profound anaemia are not so numerous as the other two types combined.

In cases of the first, or mild type, there are practically no symptoms by which the disease can be suspected. There is no interference with the appetite or digestion which might not be attributed to other causes, no reduction in the hemoglobin, and the patient feels strong and vigorous, as the body is able to nourish a few of the parasites without taxing its reserve power.

In cases of the second type, there may be periods of indigestion but without any marked interference with the appetite. The patient usually says that he feels well and superficial inspection may not detect any anaemia, but the blood examination will show the reduction in the blood constituents.

In the third, or severe type, the patient presents all the appearances of profound anaemia. The skin has a yellow parchment appearance, mucous membranes are blanched, the sclera shows clear white through the conjunctiva in which no blood vessels can be made out. The face is bloated and expressionless, and the skin over the exposed parts often appears to be much thickened and feels dry and rough. The patient may be greatly emaciated, but this may be hidden by oedema. The patient is very weak, and if he attempts violent exercise is quickly exhausted and very short of breath. There is a decided systolic murmur, and the blood examination shows a decrease of from 50 to 90% in hemoglobin, and the red corpuscles may be as low as 1,000,000, or even less. The appetite is capricious, perverted, and there may be nausea and headache. The perversion of the appetite may be shown in a fondness for clay, meal, sand, or other substances. The food is usually bolted down in large masses which may pass through the alimentary canal without being digested.

In the severe type of the disease, the patient sometimes becomes so weak that he is scarcely able to drag himself about the house, and there is general oedema which is especially marked about the feet, legs and abdomen. He may remain in this condition for some time and then begin to gradually improve, and he may gradually get worse and worse until he dies. These cases have puzzled the physicians in the past, as they were unable to account for the cause of death. When this bloated stage is reached, life seems to hang by a mere thread. Many cases will give a history of having passed through this condition, and

the accompanying photograph shows a patient seen in the mountains of North Georgia who was 20 years of age and who gave a history of having passed through this bloated stage four years ago, and since which time he had gradually improved. While he still has the appearance of a boy twelve or thirteen years of age, and there is no growth of hair upon the face or genitals, the testicles show signs of beginning development.

Diagnosis.—A positive diagnosis of the disease can only be made by finding the eggs of the parasite in the stools of the patient.

In the mild type of cases there is absolutely nothing in the appearance of the patient that would lead one to suspect the presence of the disease, and there are no diagnostic subjective symptoms, and in cases of the second type this is almost equally as true. At best you may be able to detect a slight paleness of the mucous membranes, but of course, this alone does not make a diagnosis.

The severe type presents all the symptoms which we find in all cases of profound anaemia, and there is nothing positively distinctive about this anaemia which separates the disease from the profound anaemia due to other causes. If any one should stake his reputation upon his ability to differentiate the severe type of this disease from profound anaemias due to other causes he would be sure to come to grief.

There is an important point upon which I wish to lay great stress. Where you find one case of the severe type of the disease you will find a much greater number of the mild and medium types. The severe cases are far in the minority and represent only a small proportion of the great mass of cases of all types of the disease. Usually you do not find more than one case of the severe type in one family, and yet all the other children may be infected but not be suspected on account of being of the mild or medium type and not presenting any pronounced symptoms. Too much stress has been laid upon severe type to the almost entire exclusion from consideration of the milder types, with the result that the physicians are not on the lookout for the disease unless they see these symptoms of severe anaemia. But the symptoms presented in these severe cases are simply the conditions which you would find with any profound anaemia due to almost any cause, and are not diagnostic of the disease.

Until recently all these cases of anaemia, delayed development, parchment, skin, etc., have been called malarial cachexia, and treated as such, but now, as soon as a doctor gains a little knowledge of uncinar-

iasis he is prone to call all these cases hook-worm disease, and proceeds blindly to dose them with thymol. The pendulum always swings from one extreme to the other, but eventually it will settle upon rational middle ground.

While it is true that the doctor who makes a snap diagnosis and calls every case of profound anaemia uncinariasis, will be correct in the majority of instances, yet he will also be surprised at the number of times he will find that he is mistaken, and that his treatment is of no avail. This being the case, no doctor is warranted in indiscriminately prescribing the large toxic doses of thymol without first being sure of his diagnosis; and especially so in view of the fact that a positive diagnosis can be made with such ease and accuracy.

The Disease Not Confined to the Lower Classes.—While this is a disease of the country and not of the city, and is most commonly found among the lower classes, yet I find that it bobs up in the better classes and in the cities, and often in the most unexpected quarter. Every physician must be always on the alert if he would be sure that no case slips through his hands undiagnosed, but which may be disguised by an attack of some other disease. It is the joy of every boy, whether rich or poor, to go barefoot in the summer, and to paddle about in the mud, and many who live in the cities spend their summers in the country, and while there contract ground itch and in this way have the mild or medium type of the disease.

Mode of Entrance of the Parasite Into the Human Body.—To cope with this disease intelligently so as to prevent its further spread, it is necessary for us to know by what means the parasite gets into the human body. As we find the adult worms clinging to the mucous membrane of the small intestines, we would naturally suppose that they reached this part of the alimentary canal by being taken into the mouth in some way and passing into the esophagus and stomach and then attach themselves to the small intestines. Until the investigations of Looss and Bentley with the old world parasite, it was not suspected that the parasite could get into the human body by any other route. It has been common belief among most of the men who have worked with the disease that the parasite was taken into the body in the drinking water, while others were of the opinion that as these patients often ate dirt and as the parasite was known to hatch in the soil that the parasite was swallowed with the dirt and still others thought that they were infected from the dirt upon the hands and with fresh vegetables.

The idea that any organism the size of these larvae would attempt to enter the body through the skin of the feet seems to impress every one upon first thought as being almost preposterous. I know that at first it did not seem plausible to me, but after long continued investigation and study of the parasite I was forced to conclude that this was almost the only way by which it enters the body.

In a paper read by invitation before the meeting of physicians of Central Alabama, at Salma, in November last, I reported observations which I had made of the development and habits of the larvae of this parasite. Briefly stated, these observations were as follows: When placed in damp soil the eggs hatch readily in about twenty-four hours, but the larvae are very sluggish and have very little energy. They grow rapidly for a day or two, and then the first sheath appears and they become exceedingly lively and move about very rapidly. In a few days after being hatched they reach their maximum size, and while they can be kept alive in damp soil for three or four months they do not grow any larger.

In studying the larvae under the microscope, I noticed that while they became exceedingly lively and vigorous, yet if they were placed in water with very little or no sediment or soil, their most violent efforts accomplished practically nothing toward making progress in any direction, and that they remained almost in the same spot. But, when placed in moist soil they were enabled to obtain a strong leverage between the particles of earth and grains of sand, and would go darting across the field of the microscope at a good speed, and they could force themselves through openings with ease.

From clinical investigations, which have been reported in previous paper (Journal American Medical Association, September 19, 1903) all evidence indicated that these parasites got into the body through the skin of the feet and produced the disease commonly known as "ground-itch." Various attempts have been made in this country to produce this condition artificially by placing these larvae upon the skin, but these were unsuccessful. Recently I have been more successful and wish to report the following experiment:

Small particles of soil containing larvae 24 hours old were placed on the skin of a patient, but with no result. We would naturally expect this when we remember that for the first day the larvae are very sluggish. The experiment was repeated on the fourth day when the larvae were very active, and in about eight minutes the patient said that he felt a sharp stinging pain at

the place covered by the soil. The sensation was described as feeling like the skin was being pricked with very fine needles and the patient felt that he wanted to scratch it. The soil was allowed to remain in contact with the skin for one hour and then removed. During this time the patient described the sensation as varying in intensity. Upon removing the soil the skin was found to be dotted with erythematous spots or macules which persisted. The acute stinging gradually subsided, but the next morning the patient reported that he had scratched the skin during his sleep, and I found that he had slightly removed the epithelium over the red spots, which now presented somewhat the appearance of papules. After the second night the patient complained that the intense itching seriously interfered with his sleep, and numerous vesicles had appeared and the entire area was swollen. By the fourth and fifth days the area was covered with numerous large vesicles and the swelling was considerable. Some of the vesicles had ruptured, leaving a moist oozing surface. The swelling began to subside on the seventh day and the vesicles to dry up, and by the 12th day all swelling was gone, the area was slightly reddened and the epithelium was scaling.

Before the experiment the stools of the patient were carefully examined to be sure that no eggs were present, and they were examined about twice a week from that time on, but with negative result until the seventh week after the soil was placed upon the skin. At this time a few of the eggs of the uncinaria were found in the stools. This was last week and the patient is still passing the eggs in the stools.

I believe that this is the first report of a successful inoculation with the parasite which we have in this country, and I make this brief preliminary report before this Association to go on record. I shall present a full detailed report later.

How to Prevent the Disease.—A few remarks in regard to the prevention of this disease. As I have found that the disease undoubtedly is contracted by the parasites passing through the skin of the feet, and as the clinical evidence indicates that this is almost the only way, then the prevention of the disease is practically a simple matter. As I have pointed out previously, it is almost an impossibility to control the stools of these patients, and we cannot hope to accomplish anything toward the prevention of the disease in this direction. Upon investigation I find that the evidence indicates that the disease is contracted only in rainy weather, and especially when it has been raining for more than a day and when

the ground is very moist. Therefore, if the people are taught that they must wear shoes in rainy weather and keep the feet well protected, then we can readily control the disease. The boiling of drinking water, and numerous other procedures that have been recommended are of no value.

Treatment.—The treatment of this disease is very simple. It consists in the administration of thymol, after first thoroughly emptying the bowels with a saline purgative. The treatment is usually given thus: The patient is given a large dose of salts at night, and the next morning at 8 o'clock 30 grains of thymol finely powdered are administered, 30 grains more are given at 10 o'clock, and at 12 o'clock another dose of salts is administered.

The following precautions should be observed during the treatment. Do not allow the patient to take any alcohol or oil, as these are solvents of the thymol and may produce serious results. Do not allow the patient to eat anything from the time the first dose of salts is given until after the second dose of salts, and be sure that the thymol is finely powdered and not in large crystals.

One Treatment Not Always Sufficient.—After giving this treatment as above, the stools of the patient should be again examined microscopically about a week later to see if any eggs are still present. Sometimes it will be necessary to repeat the treatment three, four, or more times. The physician can only be sure that his treatment is effective by making these microscopical examinations after giving the treatment. After removing all the worms tonic treatment is usually indicated.

Precaution in Regard to the Use of Thymol.—Every physician in treating this disease must bear in mind that five grains is ordinarily considered to be the maximum dose of thymol, and that in administering thirty grains he may be giving a toxic dose. In the old world they occasionally have deaths to follow the administration of this large dose, and therefore, it behooves the physicians in this country to be extremely cautious in its administration. In the above treatment it does not mean that he must blindly follow it as above, but he should modify it to suit the individual case and take every precaution against bad results. No physician in this country wishes to be the first one to have a death from the administration of thymol, and no physician is warranted in giving the thymol without first making a positive diagnosis.

I also wish to stress the fact that many cases of uncinariasis pass through the hands of physicians undiagnosed, and this is due usually to the fact that they belong to the

mild or medium type of the disease, which present no distinct symptoms which would lead the physician to suspect the presence of the disease. Where one member of a family has the disease there is almost sure to be other cases, and where you find one case of the severe type you will usually find half a dozen cases of the mild and medium types.

Typhoid Fever—Its Cause and Non-Contagency.*

By R. Armfield, M. D., Marshville, N. C.

The subject of this paper is to endeavor to show the pre-disposing cause, the non-contagency and the fallacy of contaminated drinking water, *sui generis*. It is true that I feel incompetent to do justice to so grave a disease; one that has caused so many homes desolate, made so many orphans and widows. I will vouch the assertion that it claims more victims than any other disease considering the number attacked, and it in the list of curable diseases. Typhoid fever is coeval with civilization, and is easily recognized in the writings and descriptions of Hypocrates and Galen before Christ. Later by Sydenham and others in the seventeenth century.

There are various nomenclatures for this dreaded disease. The ancients called it by various names; such as hut fever, mountain fever and abdominal typhus.

Later the physicians called it paludal fever, enteric fever, autumnal and typhoid fever. I think it was Dr. Louis, the great French physician who gave it the name of typhoid fever; a misnomer, I think. I think it should be called Enteric, as it commences in the bowels and ends there.

Now to the theory of contaminated drinking water, unless you have the bacilli to start with; if you have the bacilli to start with, and let it get in water, milk, etc., you may expect it to multiply, but where are we going to get our first germs to start with?

There is no doubt but that we may find typhoid germs in a man sick with typhoid fever, so may we find many germs in a neglected wound, even large enough to be seen with the naked eye; they also grow and multiply rapidly, though I have never seen flies deposit or produce germs that would make microbes, on a well man unless he be very filthy, and I have serious doubts as to whether there was ever found typhoid bacilli in a healthy individual, and if water is the medium through which typhoid fever is caused unless caused by infection of known typhoid bacilli, why did

the first settlers of America have it in the mountains where no one lived? Our forefathers hunting in the mountains had it, and called it mountain fever, also hunter's fever, where the pure water gushed out from the mountain side.

As to typho-malarial fever, we want only to give it a passing notice. I have long since been convinced that there is no such disease nor ever was. I have watched the movements of malarial and typhoid fever for twenty-one years closely, in a malarial and typhoid section, and find it an invariable rule where we have an epidemic of malarial we have no typhoid and vice versa. I practiced in two families where there was malaria in the house. The husband had typhoid fever, the wife had distinct second day chills and fever. I prescribed for her quinine and calomel. She refused to take the medicine because she said it would put her to bed; hence she did not take it, also her son did likewise. After a few days both got well of their malaria, but three weeks later her son had typhoid fever without a symptom of malaria.

Family No. 2.—The mother of a typhoid patient of mine had second day chills and fever. I prescribed fifteen grains of quinine in three capsules per diem and the old lady, not being accustomed to capsules, said she was not going to swallow those little glass bottles; hence she took no medicine. Her son had a six-week's case of typhoid fever, and a close call and no time during his illness did he show signs of malaria, nor did I give him a dose of quinine. The mother recovered entirely of her malaria without taking the little glass bottles or a dose of any other medicine.

Now as to the cause of typhoid fever and the non-contagency: The primary cause of typhoid fever is hereditary transmission as is shown to me by twenty-one years of close observation. I will relate a few cases to illustrate: I attended a family by the name of Regans, four in one house; a married sister of the family resided one mile away, and was not allowed to visit the sick family. The next case I had in this community was in this family which had been quarantined, also the mother of the whole Regan family was quarantined; she contracted the disease, or otherwise inherited it. Another member of the same family living in Anson county 10 miles away, had typhoid fever at the same time. None of three families drank of the same water, though it followed the same stream of Regans' blood. Same thing occurred in the Ashcraft families; one son, a teacher, ten miles from home was attacked with typhoid fever and died, the other brothers who were at home had fever and

* Read before a recent meeting of the Union County Medical Society.

all died but one. I saw ten cases in Robt. Rowland's family; eight were at home, two were hired out. I advised Rowland to not bring the two home. At my next visit one of the two who were hired out came home with fever, headache, etc. My next visit the other one had come home who had been living two miles away. Neither of the two had been visiting the sick ones at home. Upon interrogating Robert, the head of the family, he said that in his youth he had a severe attack of typhoid fever. They had not all drunk of the same water, but they all had drunk of the sanguinous stream of old Robert. In another Ashcraft family one died with fever before I began to practice medicine: later one in Monroe, 12 miles from home had fever, still later another brother, a physician, living in Monroe, had it also; and still later one living at Marshville, five miles from home had fever, and three years later the youngest one of the family also had it, being differently located and drinking different water.

It was similar with a family of Marsh's. The older ones all had fever before I came to Union county; recently I have treated the second and third generation for typhoid fever. There is also a family of Moores in this county the disease follows in the same way. There is a family of Evan's living in Chesterfield county, S. C., three had typhoid fever at the Fox place in said county and State, one six miles off, two in Union county, 16 miles off, none visiting each other, all had typhoid fever the same season. Didn't they strike bad water?

We see the same in a family of Hasty's; the older ones had the fever on Lanes creek, one son, sheriff of Union county, while in Monroe all his family had fever, while another family of the same blood had fever at Lanes creek, the old homestead, he moved to Marshville, some of his family had it there, moved from Marshville to Charlotte, N. C., the family had fever there—more microbes—though I think in moving they must have taken some of Eberth's microbes with them as personal property. I attended a family of Edwards', six in number. Edwards' wife was a Snider before she was married; the Sniders were so afraid of contracting the disease that they would not go within two miles of the house where the sick ones were. The next season D. A. Snider's whole family had typhoid fever. Next season Asa Collins' family all had typhoid fever. Collins' wife and D. A. Snider are brother and sister, also Collins' wife and Edwards' wife are twin sisters: none visited each other during their sickness, all living from three to four miles apart.

Another striking illustration of heredi-

tary transmission. I attended a widow Faulkenbury's family, five in number. After all but the widow had been confined to bed, I asked the widow if she had ever had fever? the answer was, yes. After asking her what kind, she said old Dr. W. C. Armfield, of Taxahaw, S. C., said she had typhoid fever. After making the enquiry I learned that my father had treated her for fever when a young girl.

Now gentlemen, I ask you all to look at both sides of the family connection and see if you do not agree with me, and you will not have to do as I have done, look and search for twenty-one years to learn that typhoid fever is hereditary. The reason that some members of a family have the disease and others do not is because one gets his immunity from one parent and the others get their hereditary tendency from the other. I am convinced that one having had typhoid fever once never has it a second time. A person may have a fever and it not be typhoid; then he may have typhoid fever, though one of those times he did not have typhoid fever. The most disgusting thing I ever heard a doctor say, is, "he is bilious and if he don't mind it will run into typhoid," and after a while the doctor and the laity see he has typhoid fever; then the doctor jumps up and says it has run into typhoid. What ignorance and deceit! Why not say, if not sure of the case, which we are not always, it has not developed—I am not sure—it may be so-and-so. Let us not do too much with oil, salts and Tutt's pills, then you will not see so many cases of bilious fever run into typhoid.

I now have five cases, same connection (Griffin family) differently located, all in bed with typhoid fever. I have mentioned only a few of the cases which have come under my observation. I could fill a volume had I time and space.

Proprietary Remedies, Patent Medicines, and Patent Medicine Prescribing Druggists.*

By W. H. Prioleau, M. D., Asheville, N. C.

In discussing proprietary remedies, patent medicines and patent medicine prescribing druggists, a great deal must be considered. We do not want to rush madly in where on more mature judgment we would only gently tread; but the subject is one which I have long since wanted to hear discussed by members of this society. In other words I want the society to put itself on record as regards the position it holds in this matter. It being my privilege to lead the debate to-

* Read before the Buncombe County Medical Society, June 20th, 1904.

night, I decided to lay the matter before you rather than write an essay on some disease.

Not many years ago, the number of proprietary medicines on the market was so few that they could be counted on the fingers of both hands; to-day the number is so great, that one would truly labor were he to attempt to make a list of them. As in everything else, there are some good proprietary remedies and some bad; mostly bad, I would say. Daily we are prescribing medicines without knowing their exact formulæ. We are told that certain preparations contain certain drugs, but the quantity of these drugs is often omitted. Again we are told that certain medicinal proprietary concoctions are absolute cures for certain diseases and we are asked to prescribe them. In our blind faith in human nature and blinder faith in testimonials we too frequently submit. The temptation to prescribe proprietary remedies is great; but once we yield to this temptation, we are lost forever. Prescribing is made easy when we use proprietary remedies; to order a few ounces of somebody's so-and-so, already on the druggist's shelf, calls for no use of our brain or of our *materia medica*. It is a self-evident fact that one who daily prescribes proprietary remedies must soon forget his *materia medica*; and, furthermore, he must become mentally lazy in the most important branch of general medicine, viz: treatment.

It has taken each of us years of hard labor to learn sufficient *materia medica* to practice, and once having learned that much, why should we permit ourselves to be robbed of it?

I admit the elegance of some of the pharmaceutical preparations on the market, but they are all the more dangerous to us in proportion to their elegance. I also admit that I have used and do use some; I have no excuse to offer, but because of a guilty conscience I apologise to myself each time I write a prescription for proprietary medicine. Again, what use has the druggist for the chemistry and *materia medica* he learned at college. Scarcely one prescription a day is received by him, which calls for his knowledge of pharmacy; on the other hand he is hourly putting up so many ounces of so-and-so's something or other, combined possibly with somebody else's something or other. Indeed the druggist of to-day, in his legitimate sphere is almost useless; any one can fill a prescription and write the dose on the bottle. He even would not run a risk of writing the wrong dose, for that also is fixed by the pharmaceutical houses and put on their original packages.

And as the licensed druggist amounts to

little, so do we as medicine men amount to less. The only class of people who amount to anything in this proprietary medicine prescribing age, are the heads of the large pharmaceutical houses. They have the brains to prepare elegant preparations of drugs, and they have the brains to say how they should be used, whether correctly or not, in many instances we cannot say. Our mail is filled with advertisements of these medicines; our office hours taken up by representatives of these houses, and our journals full of literature on their efficacy. If there were fewer pharmaceutical houses there would be fewer journals; and a great pity it is that there are not fewer. The advertisements pay for the running of the journals as is evident by the fact that certain journals almost pay you for the privilege of allowing your name to be on their subscription list. Their pay generally amounting to a clinical thermometer as a premium.

The report of the committee of the American Medical Association on proprietary remedies recommended that the following medical articles be excluded:

1. Those of secret composition.
2. Those of wrong composition.
3. Those possessing trade names.
4. Mixtures whose chemic composition is not described—and
5. Those articles in which the quantities of the articles are not stated.

This report was presented and accepted at the Atlantic City meeting, 1904.

I heartily endorse this report, but do not think it goes far enough. I would add to that list:

(6) Those articles advertised in the lay press.

(7) Those preparations that tell the reader what diseases they are good for.

It is this last class which is most harmful to the laity. They do not hesitate to buy their medicines by the bottle. That is the original package. On the label of the original package is the literature pertaining to that especial preparation and the dose. Not content with treating themselves, they undertake to treat their friends, whose disease may be entirely different from their own.

Patent medicines never have been recognized by the profession and never will; but the question comes up, should we send our prescriptions to druggists who not only sell them, but prescribe them, and worse still advertise them in our daily papers. Some examples of such advertising, I have clipped from our daily papers. You have seen them most likely, but I want to call your attention to the fact that some of our best druggists are doing this advertising. These

cure-alls, recommended to the public, are nothing more than a means to get money from a poor, sick class of people. If the medicines were of value I would be silent, but as a rule they are humbugs of the worst kind. Some being nothing but sugar and water, others being 10% to 20% alcohol. The testimonials are not to be relied upon, for I once knew a man whose boast it was that he made money writing such testimonials. He would testify to the value of a female complaint medicine, with as light a heart as he would endorse a manhood restorer. I have had druggists tell me that they must keep proprietary remedies because the physicians demanded it; and that they had to sell patent medicines because there was too little money in the proprietary medicine prescription. If we would as a body return to the old way of prescribing, the druggist would not have to keep such an expensive stock and he would make his living in a far more scientific way. On the other hand, we would not be giving up our hard earned knowledge of materia medica to shine by the reflected light of the pharmaceutical houses. And finally, the money of the people would be given to the poorer druggists and not the pharmaceutical trusts.

DISCUSSION.

Dr. Holmes: I simply wish to state, that I most heartily approve of the stand taken by Dr. Prioleau in his most timely paper. The patent and proprietary medicine curse is one of the very greatest evils against which we, as intelligent physicians, ought to consider it our duty to unceasingly fight. Unfortunately, in justice to our patients, we cannot afford to ignore every proprietary medicine, for some of them are extremely valuable; but we can and ought to make it an invariable rule never to prescribe a preparation whose formula is withheld. Justice to our patients, and our own self-respect demand this much at least most imperatively. If we order for our patients preparations of whose contents we are ignorant, can we justly condemn the fraudulent druggist who adulterates his wares, and puts into a prescription acetinalid, for instance, when phenacetin is ordered. He is simply doing on a small scale what we are encouraging on a large, viz: fraud and deception; and also, he is taking the liberty of prescribing for us. What is the use of spending time and labor in learning something about the scientific use of drugs and their physiological and therapeutic actions, if we fail to make use of this knowledge and instead make use of the therapeutics taught in the advertising circulars sent around by the enterprising and unscrupulous manufacturers of the "curealls;" or

from their smooth-tongued agents, who comes around periodically and take our time, taxing alike our patience and self-respect, by the impudent manner in which they take it upon themselves to instruct us in therapeutics. It is literally an insult to ones self-respect as an intelligent physician to have to sit and politely listen to their impertinent suggestions.

Let us unite in fighting the patent and proprietary medicine evil, to do which, let us make it an invariable rule never to prescribe any preparation of whose composition we are ignorant.

Dr. Stevens: I think that along this line the Society should take some action in regard to the use of proprietary medicines. We are obliged and can quite properly use some patent medicines, such as chloral, salol, etc., but here we should draw the line. Guilford County Society has placed itself on record as opposing the use of proprietary medicines on the label of which are printed the uses for which they are intended.

Dr. Fletcher: There is one other side which the doctor did not emphasize, viz: the injustice we do the druggists in forcing them to keep all these preparations. I agree with Dr. Stevens that we should go on record as opposing the use of these proprietary articles.

Dr. Dunn: To-day the only requirement of a good druggist is good eye-sight that he may read the labels on the bottles. We are degenerating into prescribers of proprietary remedies, and I think it is a terrible admission of our inability to do our own prescribing. The real patent remedies such as phenacetine and antipyrine we are justified in using. I think the druggist has a right to do counter prescribing as long as we encourage him by our own prescribing.

Dr. Hunnicutt: The situation of the city man gives him surroundings entirely different from the locality in which I practice. As to the prescribing of remedies of the contents of which one is ignorant, I think we are all agreed. The large manufacturing houses are now trying to make many remedies of value to the country doctor who has no opportunity to have prescriptions made up.

Dr. Whittington thinks there are very few of these remedies that he does not know how to get out of using, there should be a line of demarcation drawn.

Nephritis.*

By Robert E. Mason, M. D., Charlotte, N. C.

In taking this disease as my subject I fear that I can present little that is new, but believing that the common maladies

* Read before the recent meeting of the North Carolina Medical Society at Raleigh, N. C.

should not be neglected caused me to select this for my subject, and I trust it will be of interest to the members of this society.

Nephritides may be classed under two great divisions. Parenchymatous, which is sub-divided into acute and chronic, and Interstitial, which from the nature of the disease must of necessity be chronic only. Causes.

Acute parenchymatous nephritis, most common in early life, is usually caused by the specific fevers, exposure to cold and wet, pregnancy and ingestion of certain irritant drugs.

Chronic parenchymatous nephritis often follows an acute attack, but is generally chronic from the beginning and is caused by over-eating, excessive meat diet, alcoholism, syphilis, chronic congestion, consequent on the disease of the heart and blood vessels, and in my opinion constipation with intestinal fermentation and a deficiency of drinking water, causing an actual increase in the first instance and a relative increase in the second of the effete material excreted in the urine, are predisposing if not exciting causes.

Interstitial nephritis is almost always caused by the condition causing sclerosis of other organs, such as syphilis, gouty diathesis, chronic alcoholism, middle life or old age and heredity.

Symptoms.

All nephritides manifest themselves in one or more of the following ways:

- 1st. Changes in the urine.
- 2nd. Systemic disturbances.
- 3rd. Evidences of Circulatory disturbances.

In acute parenchymatous nephritis the main symptoms come under the head of changes in the urine and systemic disturbances. These symptoms are, diminished or suppressed urine, which is cloudy or smoky in appearance, of high specific gravity, containing a large quantity of albumin, casts, and often some free blood.

The general symptoms are, moderate fever, slow, full pulse, pain and tenderness in the lumbar region, vertigo, headache, nausea, vomiting and often oedema, which usually first appears in the eyelids. Uremia is likely to occur at any time.

In the N. C. State Board examination, held this week, the question, "Give diagnosis of the following case: Young man has been exposed to cold, onset sudden, chilliness, some nausea and vomiting, headache, restlessness, muscular twitching, pain and tenderness in the lumbar region, dyspnoea, pulse slow, hard and tense, temperature 102 degrees not constant, pallor and puffiness of eyelids and face, soon a swelling about the ankles and legs, urine smoky,

red color, acid, specific gravity 1025, on boiling a thick, curdy precipitate forms?" gives a most excellent picture of acute parenchymatous nephritis.

In chronic parenchymatous nephritis the symptoms come under all three heads. This disease usually begins insiduously, with little to refer to the kidneys. First there is a depression of spirits, loss of energy, easily fatigued, loss of appetite, listlessness and drowsiness, or there may be the opposite, nervous phenomena—insomnia and sleep that does not refresh—anemia and loss of weight, are also early symptoms and the pallor of this disease is very characteristic. In this disease there is almost always puffiness about the face, swelling of the feet and ankles, so that after the days work the shoes are tight; the swelling subsiding during the night. The urine is diminished in quantity, at first the specific gravity is high but as the disease progresses it falls below normal. The urine is turbid and albumin is always present and it may be larger in amount than any other disease of the kidney. On allowing the urine to stand a voluminous sediment will be seen to form which on microscopical examination will be found to contain casts of all kinds, especially the granular and the broad and waxy varieties.

As the disease progresses the dropsy increases and may be present in large amount, sometimes involving the serous sacs. Where the dropsy is great the uremic symptoms are not so constant, although uremic symptoms may occur at any time.

Dyspnoea, aggravated by exertion and the recumbent position, is an early and distressing symptom and is caused by oedema of bronchial mucous membrane, a failing heart, chronic uremia and pleural and pericardial effusions.

The heart is usually hypertrophied and the sound of the aortic valve accentuated.

Albuminuric retinitis, while it often occurs, is not so common as in the interstitial variety.

In chronic interstitial nephritis the principal symptoms come under the head of systemic disturbances and evidences of circulatory disturbances.

The urine is abundant and clear. The specific gravity is low, usually 1005 to 1010, and there is little albumin. The albumin is frequently so small in amount that it may not be detected and sometimes it is absent altogether in the morning urine, therefore it is especially necessary to have the sample of the quantity passed in 24 hours. The quantity of urea is usually diminished in proportion to the amount of albumin present. Dropsy is usually absent

but there is often oedema of the face and ankles late in the disease.

¶ Dyspnoea is usually present as a prominent and distressing symptom. Headache, vertigo, tinnitus, aurium and palpitation give much trouble. Albuminuric retinitis may occur at any time, this is also true of apoplexy.

The heart, which is always hypertrophied and the blood vessels sclerosed, causes an accentuated aortic sound and a pulse of high tension.

Treatment:

In acute parenchymatous nephritis, as there is an acute inflammation we should not cause a diuresis by drugs acting on the kidneys, therefore, squills, digitalis, etc., should not be used but we should resort to the true treatment, which is to flush out the kidneys by administering large quantities of pure water, preferably warm, at this point I will remind you that children like it best sweetened while adults prefer acids and lemonade. The best food, drink and drug at any age is milk.

Instead of using stimulant diuretic the other emunctories of the body should be used to excrete the effete material, therefore hot baths should be administered. Concentrated saline purgatives may also be indicated. Baths also help to relieve the congested organs, by bringing blood from the kidneys to the skin. The bath should last from 10 to 20 minutes. The temperature should be about 100 Fahr. and should be given 3 or 4 times daily. After the bath roll the patient in blankets, put to bed and let sweat for an hour or more.

Philocarpine hydrochlorate may sometimes be used with advantage. If uremic convulsions appear chloroform is indicated and to prevent a repetition give chloral in 15 to 20 grain doses, repeated if necessary. Morphia may also be guardedly used. As the poison seems to inundate the nervous system by waves, vigilance and active treatment are demanded for several days.

Dry or wet cupping, fomentations to the lumbar region, a light diet, largely milk, a warm temperature, confinement to the bed, later to the house, restraint from exercise and excitement, fulfill the remaining indications.

L. Stembo has had good results from ice bags applied to the lumbar region for 2 or 3 hours, the bags are then removed for 1 hour, then reapplied, alternating in this manner until the urine is free from albumin.

The treatment of acute exacerbations of chronic parenchymatous nephritis is practically the same as for the above disease but there is not the same objection to diuretics. The general treatment for chronic paren-

chymatous nephritis is largely dietetic and hygienic. A warm, dry climate, light flannel underwear and frequent bathing are indicated. A non-nitrogenous diet, especially milk, should be given and the bowels kept open.

The symptoms of dropsy and dyspnoea which appear in this disease usually demand attention.

For the dyspnoea nothing seems to act so well as morphia in $\frac{1}{4}$ to $\frac{1}{2}$ grain doses.

We now come to the treatment of dropsy and it is to this that I wish to call your special attention. The usual remedy, infusion of digitalis dr. 1 to 4, with potassium acetate, grains 10 to 20 every 3 or 4 hours, acts very well. For quick action nitro-benzoate of caffeine, in doses of 2 to 3 grains every 2 or 3 hours can be used. Diuretin, technically known as theobromine-sodio-salicylate, is also of use. Fluid extract of apocynum cannabinum (Canadian hemp) acting as it does as a heart stimulant, very much like strophanthus and similar drugs and also causing copious diuresis and diminution of albumin and casts, after all drugs have failed, is not to be forgotten. In large doses it is also a copious hydrogogue cathartic. The objection I have found to this drug is that it being a gastric irritant, it is apt to induce vomiting unless carefully administered.

Niemeyer's pills containing 1 grain each of powdered digitalis, squills, and calomel or blue mass, often act well. As there is need of iron Basham's mixture is usually of use.

After everything else has proven useless I have never failed to remove the dropsy with the following combination, acting as it does principally on the bowels, which in my opinion is a surer route than the kidneys:

Rx.

Antimonii et Potassi Tartras,	Grains 2
Powdered Squills,	Dr. 2
Potassium Sulphate,	
Potassium Nitrate, aa	Oz $\frac{1}{2}$
Cream of Tartar or compound	
Jalap Powder,	Oz 4
Sig. Teaspoonful night and morning.	

This compound acts on all the emunctories; skin, bowels, and kidneys, and in addition is a heart stimulant.

Here I wish to call your attention to an article in a recent issue of the Journal of the American Medical Association entitled, "Abuse of Salt as Cause of Nephritis.—Tarindo of Modena observed marked aggravation of the nephritis in two cases after treatment with saline solution for a few days. He has also observed the cases of two children who had ingested an immoderate amount of salt, followed by nephritis, the diagnosis in one case confirmed by the

post-mortem findings, Stokvis, Levi, Castagin, and Rathery have induced lesions of degeneration and inflammation in animals by means of sodium chloride."

I also wish to call your attention to the experiments of Drs. F. Widal and A. Javal, both of Paris. These gentlemen made nine consecutive experiments with salt on a patient suffering from chronic parenchymatous nephritis with marked dropsy. I will not burden the members of this society by giving these experiments in detail but will briefly give an outline.

1. In the first experiment of 10 days, the patient was placed upon an absolute milk diet of 7 pints daily. The result of this diet was a rapid diminution of both dropsy and albuminuria. The disappearance of the dropsy was principally by diuresis.

2. In the second experiment which covered a period of eight days, the patient was still kept on a milk diet but with 150 grains of sodium chloride daily. Result, marked dropsy and an attack of albuminuria.

3. The third test lasting for 11 days was on a diet of raw meat, potatoes, sugar and butter, in this diet they gave no more salt than in their absolute milk diet. Result, rapid diminution of dropsy and albuminuria.

4. The fourth test, which lasted for a period of 7 days, was the same as experiment 3, except with 150 grains sodium chloride daily for the first three days and 225 grains per day for 5 days. Result, rapid accumulation of dropsy and increase of albuminuria.

5. The fifth experiment which lasted 4 days, was an absolute milk diet of 7 pints daily. Result, partial loss of dropsy.

6. The sixth experiment lasting for 6 days was on the regular hospital diet, which of course contained the usual amount of sodium chloride. Result, rapid increase of dropsy and albuminuria.

7. In the seventh test the diet was composed of raw meat, potatoes, butter, sugar and milk, with practically no salt. Result of this meat and milk diet, small in chlorides, was again a rapid diminution of the dropsy and albuminuria until the dropsy was reduced to a minimum.

8. The eighth experiment lasting 4 days was on a milk diet of 7 pints a day containing 150 grains of sodium chloride. Result, return of the dropsy to such an extent as to be alarming and necessitating a return to a diet without sodium chloride at the beginning of the fourth day.

9. The ninth and last experiment covering a period of 18 days was on a diet of bread, raw meat, sugar and butter, with

practically no salt. Result, the dropsy entirely disappearing on the third day, albuminuria remaining stationary for ten days, then gradually diminishing. This diet was continued as the patient's regular diet with no return of the dropsy or albuminuria.

From these experiments these gentlemen came to the conclusion that a meat diet without salt was no more harmful than a milk diet and that the value of a milk diet lies in the fact that it is poor in sodium chloride.

I wish to call your attention, gentlemen, to the fact that milk is also indicated because it contains about 90% of water.

While these experiments seem to prove conclusively that salt is the harmful agency, still we will hold to the old theory of a non-nitrogenous diet till further experiments are made along this line and which I trust will be done by every member of the society.

After the removal of the fluid if it should have been in the pleural, pericardial, peritoneal or scrotal cavities, it seems from an article I see in a recent British medical journal that the injection of Adrenalin solution (1 to 1000) will in some way not fully understood at the present time, prevent the reaccumulation. Dr. James Barr, of Liverpool, after removal of fluid injected into the pleural cavity 1 dr. of adrenalin solution and although the patient was suffering from cancer of the pleura, no more fluid accumulated.

Ascites caused by cirrhosis of the liver, in which marked results were not expected the rapidity of the accumulation was diminished. The quantity used in this case was 2 to 3 dr. Another case of tubercular peritonitis with two treatments of four pints of sterile air and 2 dr. of adrenalin solution produced a cure. From these results it is to be hoped that adrenalin will prove useful in chronic parenchymatous nephritis with dropsy of the serous sacs.

The treatment of chronic interstitial nephritis in regard to dietetics and hygienics is much the same as for chronic parenchymatous.

As headache, dizziness, vertigo, tinnitus aurium and palpitation are usually the most distressing symptoms and as the hypertrophied heart and arterio sclerosis, which usually accompanies this disease, make apoplexy very liable to occur, some drugs that will dilate the blood vessels and reduce the blood pressure is indicated. Spirits of glonoin in 1 minim doses every 4 to 6 hours increasing until the desired effect is secured or potassium iodide in 5 to 10 grain doses seem to be the best drugs for this condition.

As this is the most innocuous of all nephritides the patient seldom dies from this disease but from some complication, apoplexy being the most common complication, the patient should be warned never to allow constipation or straining of any kind whatever.

Pneumonia.*

Jno. C. Montgomery, A. B., M. D., Charlotte, N. C.

Pneumonia is the term used to cover inflammation of the lungs, the cause of which is the activity in the lungs of a certain germ which is called the *Pneumococcus*.

Next to Tuberculosis Pneumonia is the most fatal disease in civilized countries. It carries off a very large number of people every year, and is especially fatal in old people, the mortality increasing as the age of the patient advances.

Acute lobar Pneumonia is the most important type of pneumonia and is a disease that runs a well-marked course and is extremely fatal.

The outset of lobar pneumonia is generally very sudden. Acute lobar pneumonia seems to be a disease of the whole body, which particularly affects the lungs.

In broncho-pneumonia on the other hand we have a very different disease, and it is to this disease principally I wish to call your attention. No subject should be of greater interest to the general practitioner than broncho-pneumonia. It is not only pre-eminently a disease of early childhood but it is largely a secondary affection.

Perhaps the most frequent cause, because of its close associations with a large variety of different diseases, is bronchitis. The bronchitis may be either primary or secondary to measles, whooping cough, and diphtheria, but the pneumonia is more liable to follow in children weakened by neglect and poor hygienic surroundings, and who have either rickets, scrofula, or tuberculosis. Septic infection from any source may be an exciting cause. This may arise from inhaling septic poison from the air or from the maternal passages during labor; it may come from collections of pus in any portions of the body, or by absorption of poisonous materials secreted in the intestinal canal. Microscopic and bacteriological examinations of pneumonic secretions have revealed at different times the presence not only of the *pneumococcus* of Frankel, but also such bacilli as that of Friedlander, the *streptococcus* and *staphylococcus pyogenes*, tubercle bacilli, and the *bacillus communis coli*. Cases which are

primary are usually of local irritation by foreign material or septic matter carried directly to the lungs through the respiratory passages. The cold of Spring and Winter constitutes among the children of the poor an important exciting cause, and it is among this class of patients that broncho-pneumonia frequently occurs, and it is among whom it is the most fatal. More important, however, than the seasons, is the age of the patient, the greatest mortality being among the very young. The reason of this is owing to the tendency of catarrhal involvement of all mucus surfaces in children.

The broncho-pneumonia which accompanies or follows measles, whooping cough, or diphtheria, is frequently the direct cause of death. This is understood when the anatomical structure of the fetal lung is remembered, and also the ease with which in poorly-nourished and strumous children pulmonary atelectasis and emphysema can occur. Either one of these latter conditions is likely to be added to a case of any great severity. Although the primary seat of the inflammation is the ultimate bronchioles, the morbid process soon extends not only to the alveoli, but also to the peribronchial and interlobular tissues. This tendency to the involvement of surrounding lung tissue constitutes one of the pathological differences between broncho- and lobar pneumonia. The epithelial covering of the bronchioles and alveoli easily and rapidly desquamates, and become mixed with the fluid exudate within the tubes and air cells with white, and sometimes red, blood corpuscles. This exudate occasionally shows the presence of fibrin elements, and then the gross and the microscopical appearance of the lung closely resembles the same tissues in lobar pneumonia. As the bronchioles become filled with the inflammatory secretions, the effect of deep inspirations is to carry more or less of it not only into vesicles which are already involved, but also into those which not yet begun the inflammatory process. The bronchioles frequently become plugged with their own contents, in the passage of air into and out of the lungs is seriously impeded. The lung tissue beyond the point of obstruction no longer can receive air, the small amount which it already contains is soon absorbed, the network of blood vessels inclosing the aveoli dilate, and that portion of lung becomes collapsed. The attempt on the part of the lung to establish compensating air space results in over-distension of some of its weaker portions, feeble expiratory efforts fail to expel this increased quantity of air, the cells remain permanently enlarged, and the lung is further crip-

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

pled by an emphysema. While this process within the bronchioles is taking place, the tissues immediately surrounding are being invaded by new cell formations, which crowd upon the opening of other bronchioles and vesicles and to a corresponding degree act as a means of distress. The atelectasis and emphysema usually attacks the weaker and more dependent portions and for this reason the position of the patient should be frequently changed.

Alarming and oftentimes sudden dyspnoea is usually the result of a rapid involvement of a considerable portion of the new lung tissue by one or both of these processes. When recovery is to occur, one of two conditions results: either the lung becomes freed from its morbid exudation and is restored to its former normal activity, or else more or less of the new tissue formation remains unabsorbed and results in a permanent consolidation. This becomes later a fruitful seat for the development of latent or acquired tuberculosis.

Upon the importance of the physical signs of broncho-pneumonia there is a wide difference of opinion. Elaborate descriptions of the signs are to be found which give them an importance that would lead one to accept them as thoroughly reliable. These accounts are sometimes as misleading as they are wanting frequently in anything approaching an accurate bedside description of this very fatal disorder of early childhood. It is an extremely difficult disease to describe, and no one description can be of the service that is afforded by study of a single case. As a rule, no extensive area of lung is involved as in lobar pneumonia, but only one or more lobules. These lobules may be near the surface, and if so give distinct physical signs; but they are just as likely, even in this location, to be so obscured by additional congestion, collapse, or distension of other lung tissue and by large moist and dry rales as to be overlooked or confused. The sub-crepitant rale is recognized to be almost diagnostic of this condition, and it undoubtedly is when it can be heard. When this is possible, it is usually at the beginning, in small localized spots, and before the larger tubes become filled or constricted. As a rule it is heard more distinctly in children who were previously in good health and in whom only a few lobules were involved. These children make a good recovery, and require little, if any, medication. When the lobules are deep-seated, scattered, perhaps surrounded by distended blood vessels, collapsed lung, or by the product of inflammation, then the sign becomes more unreliable, and sometimes impossible. There is, however, a medium ground between this extreme and

that which disregards practically all dependence upon physical changes. There are cases which give early and, during the course of disease, unmistakable signs. Emphysema and pulmonary collapse are, however, much more common attendants upon broncho- than upon lobar pneumonia, and consequently are always acting to modify the normal response of a simple consolidation. This response may be greater where there is considerable collapse or pulmonary congestion, or much diminished when emphysema predominates. The breath sounds are likewise affected as one or both of these conditions exists. The location of the active pneumonia may change from day to day as other lobules become affected, and with this change comes a renewal of many of the symptoms and physical signs. Aside from the general health of the patient and the disease which precedes the pneumonia, this successive involvement of new lung tissue is, with one exception, the determining cause of death in a large majority of cases. This exception, which bears a very close and constant relation to severe broncho pneumonia, and quite often out of all proportion to the amount of lung tissue involved, is a special pneumonic toxæmia. The morbid processes which result in this special form of systematic poisoning are not so well understood as are their clinical manifestations. Whether the processes originate in the lungs, the intestinal canal, or elsewhere, their effects are soon observed. In the heart this is always shown by a direct attack upon its muscle fibre; the kidney by the tendency to the development of albuminuria, and in the brain by general nervous symptoms. All of these organs are considerably influenced by the temperature, but in considering the actual condition and the possibilities of recovery, attention should be given to the influence of this toxic infection. In both broncho- and lobar-pneumonia, where there is much toxæmia, continuous high temperature, and considerable lung involved, the termination may be doubtful and the prognosis grave for a long time, but of the two, broncho-pneumonia is by far the more uncertain, and is also the one more liable to result in widely-fluctuating degrees as regards feelings of uncertainty and absolute safety.

The rapid exhaustion of the patient's strength and the constant danger of sudden involvement of new lung tissue make the disease oftentimes extremely disappointing. Its onset may be gradual or sudden, according to the severity of the disease which it complicates, the previous conditions of the patient's health, his age, and the amount of lung involved. When broncho-pneumonia is gradual in its onset, there may be only

the premonitory symptoms of any of the acute diseases, these gradually giving way to the more severe symptoms. If sudden at the beginning, there may be a chill or a slight convulsion, and the child ushered within a few hours into an alarming condition. The face from the start may be pale, and the entire superficial circulation contracted, the nose dilates with each rapid inspiration, the countenance may be anxious and the face pinched, and the child show signs of great distress. With this, there is a hacking dry cough, and sometimes signs of acute pleuritic pain. The lung now becomes filled with large numbers of dry and moist rales, and if the area involved is near the surface, may give evidence of congestion and beginning consolidation. The breathing becomes more and more labored, accessory muscles of respiration are brought into use, the action of the heart increases out of all proportion, even to the greatly increased respiratory activity, and every hour the condition of the child become more alarming. It now insists upon being carried constantly, sometimes being held in the arms, and sometimes laid across the mother's lap. The face and body become bathed in perspiration, and the skin more and more cyanotic with the exhaustion struggles for breath. These efforts, however, may be suddenly diminished, and the patient, instead of struggling, becomes quiet and passes into a partial or complete coma, during which time death may ensue. Again, the patient may unexpectedly rally from this unconsciousness, the result, perhaps, of a sudden attack of coughing, the color of the face begins to improve, the eyelids open, the eyes show a more natural expression. There may be even a momentary approach to a childish smile, the breathing is easier, and the pulse can again be counted at the wrist. Nourishment is now taken eagerly, although at short intervals, and is perhaps followed by one or more hours of refreshing sleep. This happy condition does not, however, mean that a favorable termination can now be expected, because within a few hours or days the same symptoms may return with increased energy and the child die within a short time afterwards. But the second or even the third recurrence, however, of these grave symptoms does not always result fatally, and a surprising recovery sometimes occurs. The temperature, which rises and falls gradually, shows many periods of exacerbation, owing in the majority of cases, to successive involvement of new areas of lung tissue. When recovery does occur in broncho-pneumonia, all the symptoms gradually disappear, and after fifteen or twenty-five days, convalescence is established.

Tuberculosis is very liable to occur as a result of the weakened condition of the patient's health and his greater susceptibility to infection, owing to the possibility of more or less of the consolidated lung remaining permanently injured, consequent upon imperfect absorption. The treatment resolves itself under two headings, supportive and symptomatic.

Frequent change of position is very important to prevent and relieve congestion, and to facilitate the expulsion of the bronchial secretion. Vomicants are to be avoided, as they are depressants. In the treatment of this disease I am a great believer in the use of laxatives, for the following reasons: As is well known, a child, up to the age of seven years, usually swallows the sputum—the sputum is laden with infection and irritating micro-organisms—the condition of the gastro-intestinal tract is none too good at best, and if this large number of germs is allowed to remain in it, the usual result is an acute gastro-enteritis, with its accompanying diarrhoea, the use of laxatives to sweep out the intestinal tract appears to me to be an eminently rational and useful measure. It is simply removing additional sources of infection. The symptoms most urgently demanding attention are the temperature, and those associated with the impaired respiration and defective nutrition. For lowering the temperature, the use of cold is now almost universally recommended. When the temperature is persistently high, the respirations greatly impeded, and the circulation poor, with perhaps marked cerebral symptoms, the systematic use of cold in some form undoubtedly gives the best results. Where time is an important factor, the bath is the quickest and most certain in its results. It should be begun warm and gradually cooled by the addition of ice, a vigorous friction being kept up on the patient's body during the whole time. Other means of applying this agent are the use of cold sponges and by cold cloths placed rapidly to the abdomen. The use of opium I bitterly condemn. If there is one drug that does invariably cause harm in this disease it is opium.

Dr. Burt, of New York, in an editorial in the Charlotte Medical Journal, discusses this subject in a way which, it seems to me, should appeal to any intelligent physician. He says:

"It is well known to those versed in the properties of drugs, and should be to those who use drugs in the treatment of disease, that opium, except in doses that are infinitesimal, depresses and finally paralyzes the centers of respiration. What is more, this potent remedy for good and for evil also

checks every secretion save that of the integument. In pneumonia the existence of the patient depends upon a maintenance of the integrity of the respiratory centers, together with the powers of elimination. When a sufferer from this vesicular exudation in the lungs is breathing forty instead of twenty times a minute, nature is compensating for the decreased area in which the inspired air can be used with each inhalation by increasing the frequency of the respiration. Moreover the kidneys are the chief means of expelling the poisonous material collected in the system, and in this malady they are generally inactive. Consequently, a drug that adds to this inactivity and also tends to paralyze the centers of respiration is, in an infection like pneumonia, in my opinion, not only injurious, but extremely dangerous.

Opium and its preparations are generally recommended and commonly prescribed in pneumonia for the severe pleuritic pain with which it is sometimes accompanied. If this suffering cannot be alleviated by such simple expedients as the local application of an ice bag, or a hot poultice, or else by strapping the affected side of the chest, dry cupping will almost invariably prove efficacious. But this little operation must be done thoroughly. Although desirable, if possible, to relieve these pluritic pains, the means of relief should never be at the expense of the patient's power of recuperation. Indeed it would be infinitely better, if otherwise without remedy, for him to endure a moderate amount of discomfort or even suffering for a few hours than to imperil his chances for ultimate recovery by the benumbing of his respiratory centres and the checking of his secretions. Opiates are likewise sometimes given to lessen the cough, which though annoying is not especially harmful. In fact, the average cough of pneumonia with expectoration, for obvious reasons, should be rather promoted than suppressed.

Finally, these drugs are now and then given in this disease to quiet restlessness, and nearly always, in my opinion, to the patient's detriment, for restlessness under these conditions is preferable to somnolence."

In its graver forms, active stimulations, as applied to the muscular structure of the bronchi, should be begun early and continued with energy and regularity throughout the disease. For this there have been recommended alcohol in large and concentrated solution, the preparations of ammonia, benzoic acid, nitro-glycerin, and digitalis, and the injections of camphorated oil and caffeine. The chest walls are to be carefully protected by cotton and oil silk,

and sometimes subjected to active counter-irritation by cups and sinapisms. During the whole course of the disease, nourishment in concentrated forms is to be given in small quantities, but at frequent intervals. These methods which relieve the general circulatory resistance, and those which are concerned in the proper nourishing of the patient and reducing the respiratory obstruction, are about all that can be of any permanent use in treatment. All depressing agents, as the possible poisonous use of drugs, should be considered as an unnecessary complication. Careful hygiene and a reliance upon the more rational means will accomplish all that can be done for a disease showing such variations and so often leading to most disappointing results.

The Importance of Careful General Preparation of the Patient for Surgical Operation.

Dr. Augustin H. Goelet, of New York, in a paper presented by invitation at the sixth annual session of the Tri-State Medical Association of the Carolinas and Virginia, at Danville, Va., February 24th, 1904, (*International Journal of Surgery*, May, 1904) says that, unless immediate operation is imperative and will not permit delay, no surgical procedure of any importance should be undertaken without sufficient preparation to secure normal activity of the intestinal tract and to restore normal action of the liver, kidneys and skin; also, that it is the surgeon's duty to minimize the risk of his operations, as well as of the anesthetic, and this cannot be done without the most careful preparation of the patient.

He lays stress particularly on the importance of re-establishing normal activity of the liver, which, if properly done, improves nutrition and does away with the intestinal distention so often a hindrance at the time of operations within the abdomen and which is a source of so much discomfort during convalescence. This, he contends, cannot be accomplished with one or two doses of calomel, or the cathartics usually employed.

The importance of testing for and recognizing the presence of bile in the urine as a guide to the proper functioning of the liver is particularly emphasized, and he does not consider the patient ready for operation as long as there is a trace of bile in the urine, since this shows that it is not being discharged normally into the intestinal tract, but is being absorbed into the circulation and is being eliminated by the kidneys.

For restoring functional activity of the liver he employs Sulpho-Lythin, a sulpho-

phosphite of sodium and lithium, which he says is the most satisfactory and reliable hepatic stimulant he has found. It does not irritate the intestinal mucosa and does not cause depletion, and may be given continuously without injury.

Careful regulation of the diet, baths and exercise, he regards important essentials also in the preparation for operation.

The Position of the Kidney After Nephropexy.

Augustin H. Goelet, M. D. Restoration of the prolapsed kidney to its normal position, the author believes, is essential to restore to normal action the kidney already crippled in consequence of the displacement which interferes with its circulation and function. He does not share the belief of those who regard the abnormal mobility of the organ as the sole cause of the symptoms, but rather its abnormally low position.

If downward displacement of the kidney causes inflammation of the organ, as has been shown, (Medical Record, December 20th, 1902) because of interference with its circulation and function, it is not reasonable to believe that fixation in an abnormally low position will effect any change in the condition so far as the kidney is concerned.

The prolapsed position of the kidney seriously interferes with its circulation and function, and when fixation is made lower down than normal the same condition prevails, with this difference, that it is permanent, whereas before fixation the recumbent position of the subject permitted normal replacement, with consequent relief, for some part of every 24 hours, which is not possible after such fixation. An additional objection to fixation too low down, below the ribs, is that compression of the kidney by the corset or clothing is permitted, and it cannot escape as before. Such compression is a constant source of irritation. Hence fixation of the kidney lower than normal leaves both patient and kidney in worse position than before.

The author takes this occasion to repeat the position he has maintained throughout, viz: that splitting or peeling of the fibrous capsule of the kidney is both unnecessary and unwise, because just as firm attachment can be secured without such mutilation, and restoration of the kidney to its normal position will re-establish normal action and the associated nephritis subsides, provided the operation is resorted to early, before permanent structural changes have taken place. In other words, he believes that any case of nephritis due to or associated with prolapsed of the kidney that is curable by splitting or peeling off the fibrous capsule

may likewise be cured by fixation alone without depriving the kidney of its fibrous capsule, if the organ is restored to its normal position.

The kidney suspended by its partially detached fibrous capsule by sutures securing it to the muscles exposed in the incision must necessarily cause attachment of the kidney too low down.

The author believes his method (Journal of American Medical Association, November 7th, 1903) of inserting the sutures and bringing them out and tying them on the surface at the upper angle of the incision is the best way of securing the kidney in its normal position. He reports 184 consecutive nephropexies by this method without mortality and without a failure to secure permanent fixation with subsequent relief of symptoms.—Abstract of a paper read at the second annual meeting of the American Urological Association, at Atlantic City, June 9th, 1904.

The Size of the Pupil as an Aid to Diagnosis.

J. T. Duncan, according to the *Medical Council*, gave this classification:

A. Pupil may have pupils evenly contracted. This may indicate: (1) locomotor ataxia, (2) meningitis and encephalitis (early stages), (3) chronic inflammation, cervical cord, (4) apoplexy of pons, (5) epileptic fits (early), (6) uremia, (7) tobacco amblyopia, (8) retinitis, (9) opium poisoning, (10) use of myotics.

B. Pupils may be evenly dilated: (1) paralysis of both third nerves (post-diphtheritic), (2) intracranial tumors (late), (3) intracranial effusions, (4) irritation cervical sympathetic, (5) acute inflammation, cervical cord, (6) premonitory of locomotor ataxia, (7) after epileptic fits, (8) cataracts, (9) amaurosis, (10) acute mania or melancholia, (11) mydriatics.

C. Pupils may be unequal, then we suspect: (1) locomotor ataxia, (2) general paralysis of insane (3) unilateral lesion of third or sympathetic nerve, (4) pain in branch of fifth nerve, (5) old iritis, (6) carotid aneurism or tumor of neck, (7) use of a myotic or mydriatic in one eye, (8) unilateral cranial lesion, (9) acute glaucoma (unilateral).

I. The pupils are contracted and fixed: In list A we exclude uremia, meningitis and encephalitis, retinitis, tobacco amblyopia. The remaining conditions can be differentially diagnosed.

II. Pupils are evenly dilated and fixed: Rare. Present in (1) amaurosis, (2) use of mydriatics, (3) complete paralysis of both third nerves.

III. Pupils are uneven but fixed: This usually points to locomotor ataxia or general paralysis of insane.

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SOME POINTS RESPECTING PNEUMONIA

In consideration of its increased prevalence and mortality pneumonia has received very prominent attention during the past twelve months. New York City Health Commission has recently been given \$10,000 additional for the special work of investigation in the pneumonia problem.

And now that we are entering upon the season when the disease gets in its most violent work, it devolves upon every practitioner to be prepared to understand as fully as possible its cause and to be able to recognize it in its inception and be prepared to treat it in the manner most promising to the welfare and comfort of the patient, and especially to be conversant with its preventive treatment.

A. G. Brown in *American Medicine*, 1903, vol. v., p. 593, and E. F. Wells in *Journal of American Medical Association* Sept. 24, 1904, in able articles have discussed this subject and pointedly show that pneumonia has been increasing and becoming more violent. Dr. Wells says "Pneumonia is a very prevalent disease and its prevalence is increasing," also, "it is a very fatal disease and its fatality is increasing."

The reason for this increase in prevalence and mortality has received no definite explanation up to the present. It has been suggested that people spend more time indoors and an increase of overcrowding are factors in the problem.

The widespread epidemic of la grippe which in recent years visited this country and its effect upon the nervous powers of many individuals, is another factor which no doubt has exerted a great influence in lowering the resisting powers of the mass of people. Alcohol also is one of the conditions which lower the resisting power in the individual. Under these conditions the prognosis is thereby more serious.

It is now recognized and considered that pneumonia is an infectious disease. The most valuable and important contribution of the past year to this problem is that of Rosenow, of Chicago, who reports a finding of pneumococcus in the blood in ninety-two percent of cases examined and they are probably present in all cases. Of this fact we have given expression editorially in this *Journal* in a previous number. Wells¹ says "the pneumococcus is found in the upper respiratory tract of many persons in health;

and this occurs in a much larger proportion of population than the statement of most observers in this field would indicate." Dr. Wells observes: "A remarkable, and I believe a most important observation was made in a series of investigations, namely, that in some instances the bacteria was found in every or nearly every member of a family, while in other families every member would be exempt. Further analysis revealed the fact that in a majority of the families in which the germ was found to be so freely disseminated, one or more cases of pneumonia had, more or less recently occurred, while the histories of the other classes of families were free from such cases."

The old idea of pneumonia being a local disease simply is a mistake, and pneumococæmia is rather a symptom of the disease and not an accident of the disease; and that pneumonia is a constitutional disease of toxic origin.²

With these points of consideration before us we can recognize conclusively the great opportunity and practical call for prophylactic measures. Not only should the expectoration be definitely cared for but all of the various excretions of the individual, sick with the disease, should be destroyed; since we know that the blood is infected, all excretions must carry the germs of the disease. Wells, in the article cited, says: "The room occupied by a pneumonia patient, should be afterward disinfected, as is done after diphtheria and some other infectious diseases. Remaining long or unnecessarily in a room, occupied by a pneumonic patient should be avoided."

In treating cases, the first and most important matter is to be able to recognize the disease in its earliest stage, and if there is any measure which may be used to abort the attack, it should be secured to the patient at once. An important point in the treatment of this disease should be to protect the patient in all of the directions in which the disease is causing evil to that patient.

Quiet and complete rest to the nervous system is of the first importance. Plenty of fresh air is very essential. Not cold air, but pure air coming into the room directly from out of doors, tempered by a stove, a furnace or radiators, air thus containing practically the fullest amount of oxygen, which it is possible to have. All possible avenues by which the air of the room may become vitiated, must be prevented; this will exclude visitors and individuals from being unnecessarily admitted, indiscriminately, into the room. It is dangerous to the patient as well as for the visitors.

1. The Mortality and Management of Pneumonia.—Edward F. Wells, M. D., China.

2. *Progressive Medicine*, March, 1904.

The diet should be all that the patient can assimilate; and should be in such a form to tempt the palate and be readily assimilated. A very light diet if digestion is impaired, generous if able to digest well.

Strychnia and digitalis are both important and must be properly used. Cohen recommends that strychnia should be used in small doses 1-120 gr. every two hours for an adult rather than large doses at infrequent periods. Oxygen inhalations are important and of great benefit, and should be commenced early when the prognosis indicates its use.

Alcohol in the writer's estimation, should be, if used at all, only resorted to in the extreme need of such stimulation. It is well left out entirely. Dr. John Hay in a carefully reasoned paper before the Liverpool Medical Institute, expressed strong views against the routine use of alcohol, in cases of threatened cardiac failure, quotes the *Therapeutic Gazette*, for Sept., 1904, his views were supported by statistics and tables of somewhat startling character. He found that in considering a group of 150 cases 47 of which were treated by himself without administration of alcohol, while the remaining 130 were treated by his colleagues, alcohol being given when the usual recognized indications for its administration arose, the mortality of the former group (those untreated with alcohol) was 16 per cent less than that in the latter; or, eliminating the cases admitted moribund from both groups, there was a difference of 15 per cent. in cases treated without alcohol.

Dr. Hall refers to a form of treatment namely, the application of ice-bags to the abdomen, strongly recommended by Dr. Barr. These were applied in some twenty cases and with benefit. He says the cold applied to the abdomen steadies the temperature, and by acting on the splanchnic area improves the tension and volume of the pulse. It increases the depth of the respirations, and thus greatly assists the heart by increasing the force of the respiratory pump. It also, according to some authorities, distinctly increases the value of digitalis in pneumonia by tending to bring the circulation into equilibrium.

GALOMEL AN INTESTINAL ANTISEPTIC.

Of the drugs in our armamentarium used as remedies which have been handed down to us from posterity, calomel is one which the profession has reason to be thankful for its continuance; and to-day it stands alone by the side of opium, quinine and the few sheet anchors of our remedies; of exact effect and action in its use.

It is one of those remedies to an end which serves its purpose as surely as any of

the therapeutic measures which is in use by the practitioner of medicine. One of the uses to which calomel is applied more frequently than in any of the pathological entities, to which it is depended upon, is for its effect in the stomach and intestinal tract as a disinfectant. In its use in this direction, it serves a soluble role, by acting as a disinfectant, as well as a stimulating alterative to the glands of the body.

Of the various antiseptics possible to be employed, nearly all are more or less objectionable by reason of some irritable effect on the mucus membrane of the alimentary canal or upon digestion itself. Of calomel used in proper quantity and manner no objection of this kind can be brought against it.

Wherever there occurs a disturbance in the alimentary canal which causes the various reflex disturbance which results in gastric headache, as well as the frequently recurring billious hemicrania calomel acts as a charm given in tenth-grain doses, repeated every half hour until relief.

With it, in the various internal purposes which calomel is used, the addition of one grain of sodium bi-carb or ipecac, one-fifth grain, the effect is enhanced.

Alexander McAlister, M. D., of Camden, N. J., before the Medical Society of the State of New Jersey, in a paper on this subject says: "Unlike the so-called intestinal antiseptics, calomel does not interfere with the action of the digestive ferments. It does not retard a single normal process, whether secretory or mechanical. On the other hand functions are stimulated and given tone to resume normal activity. This applies to the liver as well, no matter whether we regard the drug as a true cholagogue or merely as a stimulant of the flow of bile."

In the treatment of children, calomel is of the greatest benefit, and our intestinal corrective and antiseptic. Every physician will do well to study the effect and use to which this one, of our old friends, may be made to serve us.

PRESENT STATUS OF RADIUM IN MEDICINE.

Radium since its discovery has been the cause of more scientific investigation than any other element yet discovered. The chemist has investigated from the standpoint of Atomic Theory. From the experiments up to the present time according to Rutherford, of McGill University of Montreal, it looks as though our ideas of the Atomic Theory will have to be radically changed. The physicist has been deeply interested from the standpoint of the law of conservation of energy. Radium openly defies this law and the physicist cannot as yet explain this phenomena.

Radium has been quite extensively used in the treatment of malignant conditions, with more or less success. Most men engaged in X-Ray work are now using Radium put up in aluminum tubes which has a radioactivity from 10,000 to 1000,000. These tubes are used only in those places where it is a matter of great difficulty to apply the X-Ray from the ordinary X-Ray tube, such as in malignant growths in the mouth, in axilla and vagina. The results in these cases are not very satisfactory.

Rutherford has found that Radium gives off three forms of rays called the Alpha, Beta and Gamma. The Alpha ray passes through aluminum .0005 c. m. in thickness, the Beta .05 c. m. and the Gamma 8 c. m.

Radium is obtained from Pitch Blende. The best Pitch Blende contains only a very small amount of Radium and the process of obtaining it is somewhat complicated so that one pound of Radium would cost \$2,721,555.90. This puts it beyond the reach of most men for practical use. The tubes used contain only a few miligrams which costs anywhere from \$200 to \$500 depending on the radioactivity.

Naked Radium gives emanations which have been passed into water and rendered the water radio-active. This radio-active water was first made and given internally by W. J. Morton, M. D., New York City.

That the rays given off from Radium are similar to X-Ray can be easily demonstrated by taking a radium tube and a Platino Barium cyanide screen in a dark closet and when the radium is placed near the screen it floresces the same as when exposed to X-Ray.

If the Unipolar X-Ray tubes referred to by Dr. Stears of New York City, in a recent article in the New York Medical Record produce a stronger X Ray than any of the Radium tubes now in use, Radium will be gradually discarded because these tubes will not be so expensive and will do better work and can be applied to the affected area just as conveniently as any of the Radium tubes.

The Unipolar tubes besides giving off an X-Ray and being made so as to apply them directly to the diseased area, also have the property of giving a static induced or high frequency current. This alone has been used with success in treating superficial malignant conditions without any X-Ray treatment at all.

VISCERAL MANIFESTATIONS IN SKIN ERUPTIONS.

The various forms of eruptions, which under ordinary conditions appear upon the skin and known as disease of the skin are usually the cause of much annoyance to the general practitioner. To be a ready and

exact diagnostician of the usual and special forms of this peculiar manifestation of local or general conditions of the individual, is a very important matter and it is quite a task, and the ability is seldom found in the physician who practices general medicine; and only after very careful study and investigation does he aim at the proper conclusion. The development or appearance of rash or other deviation of the condition of the surface of the skin indicate quite often a pathological condition located at some more or less remote point. To be able to read these signs or pathological external manifestations, becomes a very important matter, since the complete knowledge would enable the practitioner, often, to understand how to best care for the cause, which gave origin to this condition of the integument.

Prof. Wm. Osler has been giving much work and study, in his practice, to these cases where visceral manifestations prevail, accompanying erythema group of skin diseases. In several articles, which he has published, the fact of the existence of serious conditions in important organs has been definitely brought out. In an article in American Journal of the Medical Sciences for January, 1904, he describes eleven cases of erythema accompanied by serious visceral manifestations. One special condition is that of colicky pains in the abdomen, with nausea and vomiting, recurring at irregular intervals. This condition is one of the most frequent symptoms of the whole group reported, 25 out of the 29 cases. In addition, diarrhoea and bloody passages occur. The association of attacks of colic with outbreaks of urticaria has long been known.

Various of these conditions he says, have been mistaken for appendicitis or obstruction of the bowels and have been handed over to the surgeon for operation. Again in the May number of the same Journal, Dr. Osler adds further to this series, three cases; two by Dr. Southerland, in British Medical Journal, and one brought to him by Dr. McCrea, of Johns Hopkins.

The precursory symptoms of the diseases or condition may subject the individual to occasions of distress for a number of years before the actual condition is really pronounced in its distinguishing features.

The peculiarities of the condition are characterized by colicky pains of rather peculiar behavior, recurring at intervals, not continuous, accompanied usually with diarrhoea and bloody stools, nausea and vomiting, perhaps added by angioneurotic oedema, arthritis especially of the knee joints and often renal lesions. Some weeks later the outbreak of erythema or other

eruption will occur as the crisis of the peculiar disease. Osler says: The practical lesson to be drawn from these cases in which laparotomy was performed are: first, that in children with colic the greatest care should be taken to get a full history, which may bring out the fact of previous attacks, either of skin lesions of arthritis or of intestinal crisis, and secondly, to make the most careful inspection of the skin for angioneurotic oedema, peripura or erythema.

The kidneys should be carefully watched as a number of these cases develop kidney lesions.

Regarding treatment, according to Osler, in the very chronic cases, all forms of treatment may fail to be of service. He recommends an alternative course of gray powder. The chief danger being from kidney lesions, protracted rest in bed and a milk diet promises and gives the best results.

THE SMALL MEDICAL COLLEGE: HAS IT A PLACE IN OUR SYSTEM AND A "MISSION" TO PERFORM?

There are a large number of very excellent and clever gentlemen of our profession who in answer to the above query would immediately reply negatively, but it is undoubtedly a question with two pronounced sides.

In the first place it may be well asserted that the needful equipment for a first class, high-grade medical school is very great—so great in fact as to make it impracticable to establish many of them. It is also argued that only in the larger medical schools are to be found the paraphernalia essential to teaching all of the advanced methods of modern medicine.

Both of these propositions are unquestionably true if we consider the only pure science and the specialties of medicine, but when we view the work of the general every day practitioner of medicine we are convinced there is a legitimate field for the smaller medical schools of the country at large and especially those of our own State. The great majority of men engaging in the practice of our profession become general practitioners and remain so to the end of their days. Now there is really no reason, assuming the medical brains of North Carolina is as good as that of other states, (and we contend that it is in every respect the equal of any our common country affords!) why a general practitioner should not in the main be trained in a small college of medicine as well as in a large school. In a small college there is a personal contact between the student and his instructor which counts for much, for without the personal element in teaching the real influence of the great teacher is lost. The large schools of the country are appreciat-

ing the fact that when their classes grow to such great proportions that the teacher knew personally but few of the men before him, there was a distinct loss of something which helped the pupil and the college, and they promptly in a measure at least, endeavored to meet this very problem by adding to the faculties large numbers of additional professors so as to continue to "keep in touch with the boys."

With a population of something like a million and a half there are not less than four hundred and fifty young North Carolinians attending medical schools each year. Of this number it is safe to say that not over five per cent. of those who graduate and practice will ever enter the ranks of specialism. Now when you consider the basic principles of medicine, is there any real reason beyond the added prestige of study at a distance plus the opportunities afforded one to see somewhat of the doings of the great outside world, why the average medical student should not receive the bulk of his medical education at one of the smaller home colleges where he is in contact personally with the men who instruct him in the exact disease conditions he meets with in his daily practice later? His work in anatomy, his physiologic and chemical study assuredly can be as thoroughly performed in the small school as in the crowded ranks of a bigger institution. Of course it is always to be remembered that when we consider the work in surgery and the specialties, the instruction in these must needs come from the big college located in the great city. In meeting the responsibilities which rest upon our smaller schools, I believe the men who have made them what they are have done much to commend and comparatively little to condemn. Certainly the influence of the small medical schools springing up in so many of our Southern cities is a most excellent one for the profession. It is making better, more thorough students of the diseases of our Southern clime—and these are the identical diseases which Southern practitioners treat. It is making them better doctors, more ready operators, more ready speakers in the medical societies, more ready and accomplished medical writers. Upon the whole, the influence of the smaller medical colleges on our profession is a wholesome one and we feel disposed to encourage them in their efforts to turn out good doctors.

Of course there rests upon them the grave responsibility, (and here lies the greatest danger to the profession and the public from the smaller schools of medicine) of determining whom they will accept as students of medicine, of whom they will graduate as doctors. If they stand firm for a

reasonable high standard of preliminary general education, for certain non-medical attainments in the arts and sciences, of all who enter their doors or at least depart therefrom with their credentials, all well and good, the small medical college has a mission to perform to the profession and to society as well. But if in their clamor for more students for larger classes they encourage men who should remain in manual labor to enter the ranks of a learned profession, they will prove untrue to the trust our profession reposes in them and recreant to the confidence reposed in the granting of their charters.

THE ILLEGAL PRACTITIONER: WHAT SHALL BE DONE WITH HIM?

From a few of the counties of North Carolina come letters of enquiry asking what to do in cases where men are engaged in the practice of medicine after having failed to secure the license of the State Board of Examiners, and again in cases where they assume to practice without attending the Board sessions and making an effort to get license. For the poor unfortunates who after making an honest effort to secure license and fail after being graduates of medicine I have the greatest sympathy. Most of them as a rule are worthy young men who have striven hard to reach the point of graduation and oftentimes, as a rule in fact, are in debt for money in part expended during the college course. Experience in the examination of these young men has forced the inevitable conclusion that the trouble lay in the deficiencies in the preliminary education. Again and again have I seen young graduates in medicine struggle over an examination for hours staying beyond the allotted four hours on each branch, while a better prepared man by his side completed the examination in less than two hours—some times these same two men were at medical college together and the man who failed would be heard to say that at college he had worked harder than the other man, and yet he failed to get his license. It has been said at times that the trouble lies with the cheap medical colleges. This however is a mistake, for in some of the cheaper medical schools and some of the smaller schools at that, excellent work is done and some of their graduates become as capable workers in the field medical as the men from the highest priced colleges of the the country. But the fault lies in the colleges permitting men not well grounded in the branches of science and language which entitle the possessor to be classed as well educated. Here lies the fault and it is one of which many of the higher-priced colleges are as guilty

as the small cheaper schools. And en passant, it is worthy of remark that here lies the opportunity of the small medical colleges of our State to quickly and certainly build for themselves an enduring reputation. Insist that no man shall study medicine within their walls or go forth with their diploma unless he be fairly well educated. Such graduates rarely have any difficulty in passing the state examinations anywhere and in the end these are the alumni who reflect credit and honor upon the institution sending them forth.

But to return to the subject from which I strayed. The profession has in the county medical societies an organization which can wield a most potent influence in looking after the illegal class of ignorant practitioners. With the young struggling man who is temporarily practicing in some remote neighborhood between lecture terms, there should be some degree of consideration felt and manifested, especially if he gives every evidence of pushing forward to the goal of graduation and license—he should be encouraged to properly fit himself for the profession, and the moment he gets his license he should be taken into the county society as a regular member of our guild. To the man who, attending one or two courses of lectures and assumes that he is as competent as men who have been licensed, and who essays to practice in defiance of the law of the State and who shows no disposition to better his condition so far as his store of medical learning is concerned: this character, the county medical society should through its proper officers or committees handle and vigorously too. Every other guild or profession protects itself and compels the respect of would-be pretenders, why not the medical? Of course at times it will be hard for the county society to secure evidence sufficient to convict under the North Carolina statutes, but usually they will, for despite the decision of the Supreme Court in the case of the State vs. Biggs, the fact remains there is really very, very little illegal practice of medicine in North Carolina without the use of drugs.

THE SEABOARD MEDICAL SOCIETY.

The Seaboard Medical Society will meet in Washington, N. C., December 6th, 7th, and 8th, and the indications are that the attendance will be large. Washington is a beautiful little city, an ideal place for the doctors to meet. The meetings of this society are always well attended, they always have a good program and those who attend are always enthusiastic over what they see and what they hear and what they learn.

DR. NEILS R. FINSEN.

On the 24th of September occurred the death of Dr. Neils R. Finsen of Copenhagen, whose entire life was spent in scientific investigation along the line of light therapy.

Starting out in life fully realizing his weak physical condition coupled with all the other obstacles that a young physician is heir to, but persisted in his work until he perfected the ultra violet light or Finsen light which has accomplished so much in the treatment of lupus vulgaris.

His first experiments were extremely simple, placing as he did bacteria under different colored glass and keenly awaiting results, his object being to determine why it was that the pitting in small-pox was so materially lessened when the patients were placed in a room with colored glass for windows and also to discover the color in the spectrum which had the most anti-bacterial properties.

This then led up to the present Finsen light. Although this was a decided improvement in the treatment of lupus vulgaris, it was soon found that the rays given off from the Finsen light would not penetrate a red spectrum and the tissues normally filled with blood acted as an impediment to the ray so that it is necessary to apply pressure to make the parts anemic to get the desired results.

Since the discovery of the X-Ray and since its use has been made practical this has to a large extent taken the place of the Finsen light because it has the power of penetration and the results are obtained in much shorter time than by the Finsen Ray.

THE PAN-AMERICAN MEDICAL CONGRESS.

The following distinguished North Carolina physicians have been appointed delegates to the Third Pan-American Medical Congress, which will be held in Panama from the fourth to the seventh of January, 1905:

Dr. James A. Burroughs, Asheville; Dr. W. H. Cobb, Goldsboro; Dr. E. T. Dickenson, Wilson; Dr. James M. Parrott, Kinston; Dr. Benj. K. Hays, Oxford; Dr. Geo. G. Thomas, Wilmington; Dr. C. A. Julian, Thomasville; Dr. H. A. Royster, Raleigh.

With this delegation North Carolina will be well represented. The trip will be a delightful one. While there the visiting physicians will be hospitably entertained and the scientific features of the congress will indeed be of a very high order. The writer had the pleasure of attending the second congress, which was held in the city of Mexico a few years ago, and the

recollection of the cordial manner in which he was entertained while in the hands of his southern confreres will long be remembered as a most delightful social event.

Review of Southern Medical Literature

Journal of the Mississippi State Medical Association, September, 1904.

The Medical Treatment of Dysmenorrhoea.—Alford discusses the various causes of dysmenorrhoea, giving his experiences in treatment. The drug he finds of greatest value is Apiol, especially in anemic conditions; in dysmenorrhoea of neuralgic origin he prefers gelsemium and viburnum; in cases of rheumatic origin he uses cimicifuga. He condemns the use of opiates to relieve pain, preferring antipyrine in 15 grain doses in whiskey. When the pain is due to vaso motor spasm he gives nitroglycerine. In 'nasal dysmenorrhoea' he touches the sensitive spots on the inferior turbinated bones with 20 per cent. cocaine.

Pelvic Abscess.—W. H. Scudder comprises every abscess originating within the male or female pelvis, regardless of cause, whether remote or direct, as coming under this heading. He enumerates the causes, breaking down of localized tubercular or syphilitic deposit, secondary degeneration of ovarian cyst or other tumor or suppurative inflammation of the tubes or ovaries or of the tissues surrounding them and the uterus. He lays stress on the difficulties of early diagnosis.

Treatment of the Opium Habit by Hyoscine Hydrobromate.—I. M. Catchings claims that the opium habit can be cured in from four to eight days. He places the patient in charge of two nurses, gives a good purgative, advises the patient to abstain from the drug for as long as possible, then puts him to bed giving hypodermics of hyoscine hydrobromate gr. 1-100 every hour till the symptoms of delirium appear, usually in five or six hours. He then reduces the dose or gives it at longer intervals maintaining the delirious condition for forty-eight hours. He then allows the patient to come to his senses, but if he still complains of his pains and desires opiates, he is again put under the influence of the hyoscine. He has never found it necessary to use over seventy injections of hyoscine. He claims to have cured several cases by this treatment, only a few of whom have relapsed.

The Country Surgeon and the Nurse.—J. T. B. Berry makes a plea for the training of young women in the country in surgical technique by country practitioners, so that in emergency they have a nurse on

whom they can rely to give intelligent assistance.

Remarks on Emphysema.—L. Sexton describes the surgical treatment of emphysema and records cases.

Pain in the Bottom of the Belly.—E. T. Johnson takes the position that all pus sacks are not dangerous even if they rupture, but he is not in favor of simply tapping the pus pocket, preferring complete enucleation of all diseased conditions.

Dislocation of Spine—Report of a Case.—I. D. Donald reports a case of dislocation of the spine with complete recovery after laminectomy, drawing the conclusion that these cases are not so hopeless as is generally supposed.

Memphis Medical Monthly, September, 1904.

Some Thoughts on Needed Medical Legislation in Tennessee.—W. Krauss advocates legislation to restrain the various charlatans from imposing on the laity by making it a serious offence to prescribe or treat for gain any person without having a state license.

Ulcer of Rectum.—D. A. Walker describes the symptoms of rectal ulcer, advocating stretching of the sphincter muscle, scraping, scarifying and cauterizing its base and thoroughly divulsing the sphincter. He claims that the ulcers are easily healed. Care should be taken not to overstretch the sphincter.

The Diagnostic Significance of a Chill.—B. F. Turner describes the chill as essentially a disturbance of the nervous system, enumerating the various diseases in which chills occur and their diagnostic significance.

Effusion Following Pneumonia.—I. D. Hopper calls attention to the symptoms of this complication of pneumonia, reporting a case. He recommends that pneumonia patients should be watched for some weeks after convalescence and should effusion occur, exploratory puncture and, if necessary, operation are advocated.

Interstitial Hemorrhagic Cyst of the Stomach Wall—Traumatic.—F. D. Smythe reports an interesting case of cyst of the stomach wall with operation and recovery. The patient was kicked by a mule about 12 months previous to complaining of a small tumor in the epigastrium, a little to the right of the median line. The stomach capacity was much lessened. He could only retain about two to four ounces of broth. A probable diagnosis of cancer was made, operation advised and accepted. The sack was emptied, having no opening into the

stomach. The patient made a complete recovery.

Typhoid Fever.—R. M. Street advocates the use of the sulpho carbolates as intestinal antiseptics.

A Few Jottings From the Swamps of South Arkansas.—W. S. Robinson advocates hyoscine hydrobromate instead of quinine in malaria, pilocarpin in acute rheumatism, veratrum viride in puerperal convulsions, strychnia in the second stages of pneumonia.

Abnormal Development of the Genitals.—W. R. May reports a case of congenital malformation of the penis in which there was an opening between the penis and scrotum, large enough to admit the finger, lined with mucous membrane, through which a probe was passed into the bladder with some difficulty. The pocket was about the size of a pigeon's egg. He considers it as a rudimentary vagina.

Purulent Tympano-Mastoiditis as a Sequel to Influenza.—W. R. Hayne reports a case of this serious complication in influenza with successful mastoid operation and recovery.

Nashville Journal of Medicine and Surgery, July, 1904.

Pseudoleukemia.—F. Swope describes the etiology, symptoms, diagnosis and prognosis of this rare disease, pointing out that but little can be done in treatment even to arrest its progress to a fatal termination. He considers arsenic the most helpful drug.

Report of a Case of Concurrent Ectopic and Uterine Pregnancy. Pruritis Uteri? With Report of a Case.—F. J. Runyon describes a very interesting case of the above complications. The points of special interest in the case in addition to the dual pregnancy are, the early stage at which the hemorrhage occurred, forty-three days, the relatively slight means by which it was caused and its occurrence from the fimbriated extremity of the unruptured tube and that she should be delivered of a full-term child, the operation having in no way effected gestation.

The case of pruritis uteri (?) is remarkable. A patient states that she was scratching her uterus with a hair pin, when surprised by her children coming into the room, the hair pin slipped into the womb. The hair pin was removed and three weeks later the patient aborted a four months fetus. Pruritis uteri may be one of the causes of 'race suicide.'

The Southern Practitioner, September, 1904.

Surgical Measures in Difficult Digestion.—R. Douglas, in a long and interesting article, thoroughly reviews the symptoms of

the various forms of difficult digestion in which surgical interference is indicated, considering that if operation will prolong life for a short period it should be advised.

Aortic Regurgitation.—W. H. Witt goes over the symptoms of aortic regurgitation in great detail as well as the prognosis and complications. The article should be read to be appreciated.

New Orleans Medical and Surgical Journal, September, 1904.

An Interesting Case of Nephrectomy and Nephrolithotomy.—G. Frank Lydston reports a successful operation in the above conditions.

The Importance of Surgical Tuberculosis to the General Practitioner.—Herman B. Gessner tabulates the deaths from tuberculosis occurring in the Charity Hospital, New Orleans, pointing out the importance of tuberculosis in general and of Surgical tuberculosis in particular to the general practitioner. In surgical tuberculosis he advocates aggressive treatment. He claims to have had good results from the use of aqueous extract of tubercle bacilli.

X-ray Therapeutics of Surgical Tuberculosis.—J. B. Guthrie states that X-ray has no appreciable effect upon cultures of T. B., even after long exposure. In cases of inoculation tuberculosis experiments show marked curative effects; the number of successful treatments of Lupus Vulgaris on record prove its efficacy. The treatment has also been of great value in more deeply seated lesions, as in the lymphatic glands. He records several cases successfully treated.

Surgical Tuberculosis From an Orthopedic Standpoint.—E. J. Huhner discusses the treatment of tuberculosis of the hip joint and vertebrae. The treatment of hip joint disease is mechanical or surgical, the mechanical consisting in recumbency with traction, or traction alone, or fixation; the surgical measures are aspiration of the joint, incision, erosion and drainage excision. Forcible corrections of the deformity are not advisable until the disease has entirely subsided. In Pott's disease, jackets of plaster of Paris or other suitable material are recommended.

An Unusual Case of Meningitis.—Dr. McGehee, Sr., reports a case of meningitis with unusual location of the disease along the fissure of Sylvius and over the cortical portion of the inferior or third frontal lobe and upper portion *central*, both posterior and anterior, involving speech centre and the motor centres of the leg, foot, knee and fingers.

The Treatment of Tetanus.—Dr. Jacoby discusses the five methods of treatment: Medicinal, the bacilli treatment, the anti-toxin treatment, injection of an emulsion of the normal brain tissue, the removal of some of the spinal fluid and its replacement with normal salt solution. The medicinal treatment has been generally abandoned, except in conjunction with the surgical treatment to control nervous symptoms. The Bacilli treatment consists in the injection subcutaneously of carbolic acid, 1 to 3 per cent., which may be used in conjunction with the serum treatment. Anti-toxin, no matter what method of injection is used, requires very large quantities of the serum. The injection of brain substance and of salt solution into the cord have not given good results.

Malarial Fever. Unusual Form.—Dr. Landauer describes a case of malaria in which methylene-blue proved efficacious when quinin had failed.

The Blood in Uncinariasis.—Joseph D. Weis reports the blood examination in a case of uncinariasis, showing marked improvement in the hemoglobin in a short time after thymol treatment. He calls attention to the diagnostic value of eosinophilia in cases of intestinal parasite.

The Texas Medical News.

Teething an Etiological Factor in Disease.—M. C. Overton considers that teething is not an etiologic factor in the diseases of children, that the whole cause of their trouble at this period is due to improper diet.

Some Observations on the Treatment of Burns.—Alen W. Acheson recommends gauze soaked in paraffin as a dressing for burns. The gauze is soaked in paraffin and allowed to harden before using. It is warmed before the fire to render it pliable.

The Medical Treatment and Management of an Attack of Appendicitis.—Boyd Cornick considers that the delivery of every case of appendicitis to the surgeon is a mistake. He leans to Ochsner's treatment; entire abstinence from all food by the mouth, both solids and liquids, because food in the stomach and small intestines causes necessarily more or less peristalsis which tends to generalize a local peritonitis already existing and develops it when none exists. Exclusive rectal alimentation every four hours by using small quantities of predigested liquid food diluted with not exceeding four ounces of water. Gastric lavage to remove the undigested food which may already exist in the stomach and small bowels, after which peristalsis and pain subside. Absolute rest in the recumbent position. Cornick advocates the use of

opiates to more completely arrest peristalsis. He draws attention to Osler, the physician's dictum, "there is no medical treatment for appendicitis," and Ochsner, the surgeon's statement, that he cures a larger percentage of cases of appendicitis by the above treatment than any surgeon. Cornick rightly holds that any medical treatment is to be preferred to surgical interference if the results are as good, and in the case of Ochsner, treatment of appendicitis, they appear to be better.

The Maryland Medical Journal, September, 1904.

Antitoxin for Hay Fever and Rose Cold.—Leonard K. Hirschberg reviews the reports of the serum treatment, stating about 300 patients suffering with hay fever have been treated with Dunbar's antitoxin, of which 182 are reported to have obtained a perfect result, only 40 receiving no relief.

Texas Courier-Record of Medicine, September, 1904.

Cholecystotomy for the Removal of Gallstones.—A. C. Walker reports the successful removal of 16 stones weighing 489 grains.

Major Surgery Under Local Anaesthesia.—J. A. Bodine describes the technique of local anaesthesia in major operations with 0.25 per cent. solution of cocaine.

Acute Cataupal Dysentery Peculiar to the Texas Oil Regions.—Grey Reed Beaumont describes a disease of the alimentary canal which he considers due to malaria and consequent lessened excretion of bile as well as to infection from ordinary dysentery.

Typhoid Fever.—M. Smith considers the Brand treatment inapplicable to private practice. He does not advocate intestinal antiseptics, but simply regular purgation with dietetic and symptomatic treatment.

Book Notices.

Progressive Medicine, Vol. III, September, 1904. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, 284 pages, 19 illustrations. Per annum, in four cloth-bound volumes, \$9.00; in paper binding \$6.00, carriage paid to any address. Lea Brothers & Co., Publishers, Philadelphia and New York.

The character of this quarterly is already so well known, both to the press and to the public at large, that a formal introduction is perhaps superfluous. It has, in the past,

aimed to combine a thorough and scientific spirit, such as animates the best of the European publications, with an enjoyable and readable manner of presentation. Progressive Medicine must be itself progressive, and we firmly believe that in certain particulars this latest issue of the series will be found to have even outstripped its predecessors.

The September issue contains four subdivisions: Diseases of the Thorax, Dermatology, Obstetrics and Nervous Diseases. To one who has followed these subjects with any degree of attention during the past year it is a perfectly evident fact that notable advances have been accomplished. Not only has the old field been thoroughly reworked and retitled, but entirely new mines, of vast import and value to the future, have been opened up. The physical methods in the treatment of disease, which are claiming so large a share of European investigation—balneotherapy, radiotherapy, actinotherapy and massage; the sociological side of the infective diseases, especially tuberculosis; the ætiology of many hitherto obscure conditions, such as eclampsia, diagnosis, both by means of the old and by the newly-introduced physical methods; improvements in therapy in all its innumerable applications—such are certain of the most important aspects of the progress which has been made during the preceding year. To summarize the work which has been done along these lines, to separate the fanciful from the real, to give a fair-minded and far-reaching over-sight over these new domains has been a task of no small proportions. But the names of those who have been enlisted in this effort—Ewart, Gottheil, Spiller, and Norris—is in itself an ample guarantee of a full accomplishment. We therefore present you with this, the latest offspring of the series, in the full confidence that it will deserve, and will receive the measure of your attention and your approbation that it merits.

The "get-up" of the book, the quality of the paper, the excellent type, and the accurate indexing, render it, purely as an example of modern book-making, a worthy addition to any library.

A Text-Book of Clinical Diagnosis. By Laboratory Methods. For the use of Students, Practitioners, and Laboratory Workers. By L. Napoleon Boston, A.M., M. D., Associate in Medicine and Director of the Clinical Laboratories of the Medico-Chirurgical College, Philadelphia; formerly Bacteriologist at the Philadelphia Hospital and at the Ayer Clinical Laboratory of the Pennsylvania Hospital. Octavo volume of 547 pages, with

320 illustrations, many of them in colors. Philadelphia, New York, London: W. B. Saunders & Co., 1904. Cloth, \$4.00, net; Sheep or Half Morocco, \$5.00, net.

Dr. Boston here presents a practical manual of those clinical laboratory methods which furnish a guide to correct diagnosis, giving only such methods, however, that can be carried out by the busy practitioner in his office as well as by the student in the laboratory. He has given special attention to outlining in progressive steps the various procedures in clinical technic, such steps being illustrated whenever possible. All the more recent methods for the examination and staining of blood are described and illustrated by original drawings, and the subject of Serum-Diagnosis is very carefully considered. The newer methods for the estimation of Sugar, Bence-Jones' Albumin, Uric Acid, and Purin have received thoughtful consideration. The subjects of Animal Parasites, Diseases of the Skin, Transudates and Exudates, and Secretions of the Eye and Ear have received an unusual amount of space. Attention has also been paid to Inoscopy and Cyto-diagnosis. Indeed the book contains much useful material throughout, and being the latest work on Clinical Diagnosis, includes the most recent advances along that line.

Essentials of Chemistry, Organic and Inorganic. Containing also questions on Medical Physics, Chemical Philosophy, Medical Processes, Toxicology, etc. By Lawrence Wolff, M. D., formerly Demonstrator of Chemistry at the Jefferson Medical College, Philadelphia. Sixth Edition, Thoroughly Revised. By A. Ferree Witmer, Ph. G., formerly Assistant Demonstrator in Physiology at the University of Pennsylvania. 12mo volume of 225 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Company, 1904. Cloth, \$1.00 net.

We need but mention the fact that this little work has reached its sixth edition to prove beyond question its practical usefulness. The recent important discoveries in physics and inorganic chemistry have rendered it necessary, in Dr. Witmer's revision, to make extensive additions almost to every part of the work. The subject of organic chemistry, especially organotherapy and the substituted ammonias, has also been carefully revised and much new matter added. We find the book unusually excellent.

Examination of the Urine. By G. A. de Santos Saxe, M. D., Pathologist to the Columbus Hospital, New York City. 12mo volume of 391 pages, fully illus-

trated, including 8 colored plates. Philadelphia, New York, London: W. B. Saunders & Company, 1904. Flexible leather. \$1.50 net.

Dr. Saxe has presented a work on examination of the urine unusually complete, absolutely up to date, concise, yet explicit in all its parts; and it will be found to meet fully the requirements of the student and practitioner without burdening him with unnecessary analytic procedures. Special attention has been paid to the interpretation of findings as applied to clinical diagnosis, and the student is told what each chemical element and each microscopic structure means when found in the urine. The character of the urine in various diseases is also described in detail. Descriptions of technic have been made very explicit, and the author has inserted some new methods of working developed in his own experience. Cryoscopy and other means of functional diagnosis have been given their proper places. The text is fully illustrated, including eight colored plates of the various urinary crystals. The work will be useful because it is practical.

A Text-Book of Human Histology. Including Microscopic Technic. By Drs. A. A. Bohm, and M. von Davidoff, of Munich, and G. Carl Huber, M. D., Professor of Histology and Embryology in the University of Michigan, Ann Arbor. Second Edition, Thoroughly Revised and Enlarged. Handsome octavo of 525 pages, with 376 original illustrations. Philadelphia, New York, London: W. B. Saunders & Company, 1904. Flexible Cloth, \$3.50, net.

This work of Drs. Bohm and Davidoff is well known in the German edition, and is considered one of the most practically useful books on the subject ever written. Dr. Huber in editing the American edition has added much useful matter, the practical results of his own extensive experience in histologic endeavor. This new second edition has been in large part reset, all the newest methods of technic being incorporated. For convenience in the laboratory it has been bound in flexible cloth.

How to Cook for the Sick and Convalescent. By Helena V. Sachse. Second Edition, Revised and Enlarged. Philadelphia: J. B. Lippincott Co. 1904. Cloth. Large 12mo, Pp. 297.

This book—"arranged for the physician, trained nurse and home use"—is one that should be in every home and in the library of every physician. In this day, when doctors rely so much upon the trained nurse for the preparation of diet, a book of this kind is a necessity. The physician when a

trained nurse is not obtainable should have it in order that they may give detailed directions. In fact, every home should have this book, for it contains such details as to selection of food and how to prepare it for the sick that we do not know of its practical equal. After a classification of recipes for ready reference, it tells the different ways of preparation of meat, milk, drinks, toasts, soups, gruels and mushes, griddle cakes, eggs, etc., etc. It has a chapter on peptonized foods, etc. A well arranged index of 17 pages is added. It gives us pleasure to recommend the book.

Lectures to General Practitioners on the Diseases of the Stomach and Intestines as well as The Allied and Resultant Conditions With Modern Methods of Diagnosis and Treatment. By Boardman Reed, M. D., Philadelphia, Pa., Professor of Diseases of the Gastrointestinal Tract, Hygiene and Climatology in the Department of Medicine of Temple College, Philadelphia; Attending Physician to the Samaritan Hospital; Member of the American Medical Association, American Climatological Association, American Academy of Medicine, American Electro-Therapeutic Association; Foreign Member of the French Societe d'Electrotherapie, etc. This work in its eighty-two lectures covers comprehensively the Etiology, Pathology, Symptomatology, Diagnosis and Treatment of the various diseases in question and is complete in one large octavo volume of 1024 pages, fully indexed and illustrated by about one hundred and fifty engravings in line and half-tone process. In Substantial Cloth Binding, \$5.00, net; Half Morocco, \$6.00; Sent Post or Express Paid on Receipt of Price. E. B. Treat & Co., Publishers, 241-243 West 23d St., New York.

The need of a modern treatise, covering this general subject, is evident by reason of the limited literature specially devoted thereto, and the increasing demand for such.

This octavo volume of 1024 pages embraces a full account of the simplest and least disturbing methods of determining the character of the motor secretory and excretory work of the principal organs having a part in the processes of digestion and metabolism, by examinations of the stomach, contents, feces, blood, urine, etc.; together with a full exposition of the subject of diet and the therapeutics of the digestive disorders in general, including indications for the various forms of electricity, x-rays, massage, vibratory stimulation, hydrotherapy, gymnastics, liquid medication, medi-

cal and surgical treatment, etc., in addition to "The Gastrointestinal Clinic" in which the diagnosis and treatment of all the known diseases of the tract are separately considered.

General practitioners and specialists in this department of medical science in view of the great advances in methods, recognize the importance of avoiding humiliating mistakes in diagnosis, and disastrous failures in treatment. They should know how to diagnose a case of Hydrochloric Acid excess from one having a deficiency or total absence of it in the gastric juice.

Previous publications (especially foreign) formerly regarded as authorities are now antiquated, out of date, and far behind.

The author, Dr. Boardman Reed, of Philadelphia, has these threefold qualifications for undertaking this work:

First, his large experience in this special field of medicine supplementing the knowledge acquired during twenty years of general practice among chronic, dyspeptic and nervous invalids in Atlantic City, many of whom were exceedingly irritable and intolerant of all but the gentlest handling. He then devised methods as little unpleasant and disturbing as possible, compatible with an accurate diagnosis and successful treatment. These he has since striven to perfect, and from the platform has given the benefit to others in his lecture courses to students.

Second, as an equipment for his endeavor, beside an unusually large clinical experience, he has had the advantage of special training under the leading gastro-enterologists of Europe—Oser of Vienna in 1885, and Ewald, Boas and Kuttner of Berlin in 1895—as well as much post graduate study in this country.

Third, he has been recently teaching in this department of medicine, especially concerning diseases of the gastrointestinal tract, which has helped to keep him *en rapport* with the subject. The substance of his lectures he has embodied in this work, and has also included the latest advances and discoveries in a line of practice which every year adds immensely to the literature of the *ars medica*.

Dr. Reed's book is better adapted to the needs of the general practitioner than any similar work old or new. The importance of rightly understanding the newer methods in the diagnosis and treatment of gastrointestinal diseases is self-evident. Dr. Reed and his publishers have made it possible to get all this in a single, not too bulky volume, and at a less price than must be paid for other works covering the same diseases in separate volumes. Their combination in this one volume gives it a decided advan-

tage over other works—Cyclopedias and Systems that attempt to cover these and kindred subjects in two, three or more volumes.

Notably among the allied affections we mention appendicitis. The author's lectures embody a complete discussion of that disease from the medical as well as the surgical point of view, describing the more useful non-operative measures and indicating when operative intervention should be invoked. This should be invaluable to physicians practicing far away from hospitals and skilled surgeons.

Another extremely useful section of great value is that on diagnosis and treatment of Diseases of the Rectum and Anus, specially contributed by Dr. Colier Martin, a well-known specialist in that line. In this section is given full instruction in the technique of the popular and highly successful injection method of treating Hemorrhoids.

Other valuable sections which relate to Diseases of the Intestines are those on Constipation and Chronic Diarrhea, and include new and effective methods of treatment such as special gymnastics, massage, and the "olive oil cure" which has achieved such marked success in Germany.

Attention is called to the lecture on that most prevalent and insidious and chronic diseases, Intestinal Catarrh; a much fuller consideration than is usually accorded to the subject is given in this part of the work; new and promising methods of treatment are explained and illustrated. The lectures on movable kidney, on the displacements of the various other abdominal viscera beside the stomach, that on dysentery, and that on bacteria and animal parasites in the intestinal tract, are also of the utmost practical value. The section entitled "A Symptomatic Guide to Diagnosis" is a novel feature, which will enable the practitioner to trace any obscure or puzzling symptom to its possible cause, and thus correct diagnosis may often be reached; with an account of the relations of gastrointestinal diseases to numerous other affections, such as Neurasthenia, Insomnia, Heart Disease, Movable Kidney, Bright's Disease, Genito-Urinary Complications, etc.

By means of the lecture form this work brings the author and reader more nearly together than the stiff didactic text-book. The author, too, has made his instructions so plain and simple that every general practitioner, as well as specialists in other lines, will find it a real help in the countless puzzling cases complicated with, or wholly dependent upon, derangements in the digestive system.

The Doctor's Red Lamp. A Book of Short Stories Concerning the Doctor's Daily Life. Selected by Charles Wells Moulton. The Saalfield Publishing Co. 1904. Chicago, Akron, O., New York.

This, the second volume of the Doctor's Recreation Series has been received. It is a genuine recreation to even review it. It is just what it claims to be. It contains a fund of amusement for both the doctor and the patient. A book of short stories containing the doctor's daily life, might be considered by the serious not an essential publication. The idea would be a mistake. An occasional hour devoted to the reading of the short stories that this volume contains will do any doctor good. Many of the stories are old favorites. Many of them are by well known and standard authors. All relate to some episode of the doctor's life, and in a manner both striking and original. I believe this is the first publication of its kind ever offered to the public, or the profession. We advise our doctor friends to read this book.

Essentials of Materia Medica and Prescription Writing. By Henry Morris, M.D., College of Physicians, Philadelphia. Sixth Edition. Thoroughly Revised. By W. A. Bastedo, Ph.G., M. D., Tutor of Materia Medica and Pharmacology at the Columbia University (College of Physicians and Surgeons), New York City. 12mo volume of 295 pages. Philadelphia, New York, London: W. B. Saunders & Company, 1904. Cloth, \$1.00 net.

Dr. Bastedo, in making the revision of Dr. Morris' "Essentials of Materia Medica," has furnished the student with a work complete and up-to-date in every particular. Much of the text has been in great part rewritten. There have been introduced articles on adrenalin, stypticin, and on the iodine and silver synthetics. The present sixth edition is all that could be desired.

Transactions of the Tennessee State Medical Society. 1904.

The transactions come to us this year in a well arranged volume of about five hundred pages. This Society is one of the largest in the country. It has over twelve hundred members. Dr. P. F. Eve is president, and Dr. E. H. Jones is secretary.

Transactions of the Medical Society of the State of New York. 1904.

The proceedings this year fill a volume of over five hundred pages. In many respects the volume is the best ever issued by this Society. It is well arranged and contains many valuable papers, written by men known nationally.

Essentials of Nervous Diseases and Insanity: their Symptoms and Treatment. By John C. Shaw, M. D., late Clinical Professor of Diseases of the Mind and Nervous System, Long Island College Hospital Medical School. Fourth Edition, Thoroughly Revised. By Smith Ely Jelliffe, Ph.G., M.D., Clinical Assistant, Columbia University, Department of Neurology; Visiting Neurologist, City Hospital, New York. 12mo volume of 196 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Company, 1904. Cloth, \$1.00 net.

Of the progress made in every branch of medicine during the last few years, none has been more prominent than that considering diseases of the nervous system and of the mind. Dr. Smith Ely Jelliffe, therefore, in making the revision for this new fourth edition, has found it necessary to recast the work entirely, bringing the order of arrangement in accord with the present knowledge of these important subjects. Quite a commendable change in arrangement is the grouping of subjects in such a way as to bring out the natural relations of affiliated nervous disorders. This will be found of great service to the student.

In the section on disorders of the mind, the general views of such leading psychologists as Ziehen, Weygandt, Kaepelin, Berkeley, and Peterson have been carefully weighed. This new fourth edition is well worthy our recommendation, and we give it most heartily.

Essentials of Bacteriology. By M. V. Ball, M. D., formerly Resident Physician at the German Hospital, Philadelphia. Fifth Edition, Thoroughly Revised. By Karl M. Vogel, M. D., Assistant Pathologist at the College of Physicians and Surgeons (Columbia University), New York City. 12mo volume of 343 pages, with 96 illustrations, some in colors, and six plates. Philadelphia, New York, London: W. B. Saunders & Company, 1904. Cloth, \$1.00 net.

Within the last few years rapid progress in bacteriology has involved many radical changes in the science, necessitating a thorough revision in the preparation of this edition. It is with pleasure we note the inclusion of all the recent advances in the subjects of Immunity, Tuberculosis, Yellow Fever, Dysentery, Bubonic Plague, and other infectious diseases, making the work reflect as faithfully as possible the present status of Bacteriology. We can confidently say that this book in the present fifth edition will be found of inestimable service to the student.

Essentials of Anatomy; including the Anatomy of the Viscera. By Charles B. Nancrede, M. D., Professor of Surgery and Clinical Surgery in the University of Michigan, Ann Arbor. Seventh Edition, Thoroughly Revised. 12mo volume of 410 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Company, 1904. Cloth, \$1.00 net.

This work, now in its seventh edition, has met with a most cordial reception. In this revision the entire book has been carefully gone over and the section on the Nervous System completely rewritten. The illustrations throughout the text are excellent, showing the anatomy of various parts with unusual clearness. Students, and indeed young practitioners, will find the work of great service.

Surgical Differentials. By J. W. Draper Maury, M. D., Rockefeller Institute Research; Fellow in the Laboratory of Experimental Surgery, Columbia University, New York. Illustrated. James T. Dougherty, New York.

There are three distinctive characteristics to this little book: Differential tables, unique illustrations and an up-to-date, terse text.

Differential diagnosis has always been a difficult subject for every one. A volume which presents a long series of differentials in tabular form must therefore be useful. When, in addition, the tables are thoroughly correlated with the rest of the book, and all is made to follow a logical scheme, it becomes doubly valuable, for recitation purposes.

A book written to fill the vacancy for which this one has been designed is a distinct step in advance, when it places into the hands of students graphic "line sketches," made by one of themselves and so simple that any one can reproduce them.

The text is as clear as the illustrations, and reflects the most recent surgical advances, some of which have not yet found their way into general surgeries. The author strives to render his pages of value, particularly to the student who is preparing to take the comparative examinations for the hospitals. To this end he has, in addition, appended a list of the examinations for 1902 and 1903, at all the important hospitals in and near New York.

The book is well designed and in every respect a credit both to its author and publisher.

Dwight's Epitome of Toxicology. A Manual for Students and Practitioners. By E. W. Dwight, M. D., Instructor in Legal Medicine, Harvard University. In

one 12mo volume of 298 pages. Cloth, \$1.00, net. Lea's Series of Medical Epitomes. Edited by V. C. Pedersen, M.D. Lea Brothers & Co., Publishers, Philadelphia and New York, 1904.

This little volume is the outcome of a persistent demand for a small, compendious manual covering the essentials of Toxicology. One that shall be trustworthy and modern, adapted to the needs of medical students and practitioners, and withal at a moderate price. The author has produced a book which is in every way a companion to his "Epitome of Medical Jurisprudence," and stronger commendation than this could not well be given. The physician who has mastered the contents of these two small volumes is indeed well equipped for almost any medico-legal emergency, and the student who uses them as his text-books has started on the shortest and easiest route to a thorough grounding in an essential part of his medical education.

Some idea of the thoroughness with which the author has covered his subject may be obtained from the following brief of contents. After a section on the general principles of Toxicology the subjects are taken up as follows: Irritant Poisons; Specific Irritants; Metallic Irritants; Vegetable Irritants; Animal Irritants; Poisonous Foods; Cerebral Neurotics; Spinal and Cerebro-spinal Neurotics; Depressants; Astenics; Ptomaines, etc.

While the volume is not intended and could not be expected to cover the ground exhaustively, the amount of definite and essential information which the author has so clearly presented is surprising and satisfying.

The Surgical Treatment of Bright's Disease.

By George M. Edebohls, A. M., M. D., LL.D., Professor of the Diseases of Women in the New York Post Graduate Medical School and Hospital; Consulting Surgeon to St. Francis Hospital, New York; Consulting Gynaecologist to St. John's Riverside Hospital, Yonkers, N. Y., and to the Nyack Hospital, Nyack, N. Y.; Fellow of the New York Academy of Medicine, and of the American Gynecological Society; Honorary Fellow of the Surgical Society of Bucarest; Permanent Member of the Medical Society of the State of New York, etc. Frank F. Lisiecki, Publisher, 9 to 15 Murray Street, New York. 1904.

Dr. Edebohls has given the profession a very interesting book. He realizes, however, that the time is not ripe for a complete systematic presentation of the subject of the treatment of Bright's disease. He believes that the subject is too modern and too many

questions relating to it that are still unsolved.

There is manifest, however, a very active and insistent demand on the part of the medical profession for such facts and information, especially as regards results, as may be at present available, especially concerning the treatment of so common a malady as chronic Bright's disease. To meet this demand as far as possible at the present writing is the object of this volume. The work embodies with completeness our present knowledge of the surgical treatment of Bright's disease.

The publication contains about 420 pages and is beautifully bound in cloth. Those who are interested in the surgical treatment of Bright's disease can here find the very latest and best literature on the subject.

Blood Pressure as Affecting Heart, Brain, Kidneys and General Circulation. A Practical Consideration of Theory and Treatment by Louis Faugeres Bishop, A. M., M. D. Physician to the Lincoln Hospital, New York; Late Chairman of the Section of Medicine of the New York Academy of Medicine; Member of the New York Pathological Society; the Neurological Society; Alumni Association, St. Luke's Hospital, etc. New York. E. B. Treat & Co., 241-243 West 23rd Street. 1904.

The publication of a treatise on blood-pressure at this time when so much has been recently learned is very appropriate. In clinical medicine one of the most interesting problems, certainly one that ought to concern every thoughtful physician is the scientific study of the circulation, and the accurately measuring or estimating the blood pressure in many disease conditions. This is valuable from a practical standpoint. The subject of the mechanical measurement of the actual pressure in the vessels is a condition that every physician ought to be familiar with. The book is well written and deals with the subject clearly.

It is nicely bound and contains 112 pages. It is well worth the price, which is \$1.00.

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H. v. Bardeleben (*Archiv. f. Gynaecologie*) Six patients in whom during labor the Bossi dilator was used were examined by the author five months after confinement. In all cases more or less serious lacerations of the cervix were found. Considering the large percentage (75 per cent.) in which deep lacerations of the cervix eventually lead to gynecological troubles the author finds one more cause against the use of the Bossi or similar dilators.

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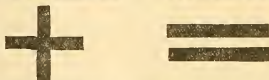
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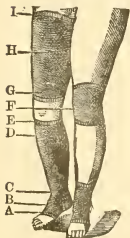
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Eosinophilia in Skin Diseases.

French (*Guy's Hospital Reports*) has investigated the question of the increase of eosinophile leucocytes in the blood in skin diseases. The writer thinks that in normal blood the proportion of different leucocytes is as follows: Small lymphocytes, 20 to 30; large lymphocytes, 4 to 8; polymorphonucleated cells, 62 to 70; eosinophile cells, $\frac{1}{2}$ to 4 per cent. In French's 90 cases of skin diseases there was eosinophilia in only 13. Hence eosinophilia is not a characteristic of skin diseases in general, and in the few cases where it occurs it cannot be said that the skin disease was the cause. The condition appears to be the exception in skin diseases, except in the case of pem-

phigus, dermatitis herpetiformis, and xanthoma diabeticorum.

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Literary Notices.

The author of "The Heart of the Ancient Wood" has a short novel in Lippincott's Magazine for November which will advance him in the favor of his friends and make him new ones. It is called "The Prisoner of Mademoiselle de Biencourt," and happens in Acadie, where "Evangeline" lived and loved. But it is a dashing French life that it pictures and it sparkles with brilliant action.

No other American magazine is publishing, from month to month, anything like the amount of campaign material that appears in the successive numbers of the Review of Reviews. The editorial presentation of the various issues in that periodical closely follows the trend of the national canvass, and no important development is overlooked. In connection with the appearance of Judge Parker's letter of acceptance, the October number of the Review has an interesting discussion of the charges of extravagance against the Roosevelt administration and an exposition of the famous "Order No. 78." There is also extended comment on the New York State situation and the comparative strength and weakness of the opposing gubernatorial candidates, Justice Herrick and Lieutenant-Governor Higgins. The "Cartoons of the Campaign," this month, are the best of the season.

The October-December number of The Forum contains six reviews of the quarter's progress and four special articles. H. Litchfield West's survey of "American Politics" is of unusual importance this quarter, as it discusses the issues and prospects of the Presidential campaign. The war in the East naturally absorbs the greater part of A. Maurice Low's account of "Foreign Affairs." In his paper on "Finance," Alexander D. Noyes deals with the effect of the same conflict upon the money market as well as with the harvest outlook, and the course of the Stock Exchange. "Applied Science" is in the hands of Henry Harrison Suplee, who considers mainly recent advances in engineering, but takes note also of the commercial value of chemical and other discoveries. Herbert W. Horwill's "Literature" review is occupied in the present issue with books of travel. "The Educational Outlook," by Ossian H. Lang, includes a detailed criticism of the principal educational exhibit at the St. Louis Fair. The special articles are "Protection Against Fires and Faulty Construction," by Louis Windmuller; "Private Societies and the Enforcement of the Criminal Law," by Champe S. Andrews; "The Negro's Part

in the Negro Problem," by Prof. Kelly Miller, of Howard University, Washington, D. C.; and "Is the Human Brain Stationary?" by Prof. W. I. Thomas, of Chicago University.

Alexander's Operation on the Round Ligaments.

Stewart McKay (*Australasian Medical Gazette*) says that retroflexion of the uterus in virgins and unmarried women when there is no prolapse, and when there are no adhesions present, is the condition for which this operation is most suitable. Retroversion of the uterus he considers a suitable condition, for though a retroversion may cause no symptoms, still if the uterus is allowed to remain in its normal position the abdominal pressure may in time convert the retroversion into a prolapsus or a retroflexion. If after performing the curettage he finds the uterus retroverted, he shortens the ligaments as a routine practice. If with retroflexion or retroversion there is slight prolapse of the uterus, shortening the round ligaments is a good operation when used in conjunction with amputation of the cervix and colporrhaphy. This allows the uterosacral ligaments (the chief support of the uterus) to regain their tone. In well marked cases of prolapsus the operation may be done if the woman is in the child-bearing period; if the menopause is past, or if near at hand, ventrofixation is the proper operation for severe prolapse, though of late he has adopted a plan of removing the uterus by vaginal hysterectomy. It is such an easy matter to explore the ovaries and tubes through the internal ring that he has adopted this method in preference to the median incision when he wishes to remove a small ovarian cyst or a hydrosalpinx.

Gastration for Tuberculosis of the Testicle.

Greene, in the *Amer. Jour. Med. Sc.*, says that the radical treatment should not be allowed to become obsolete, that castration has an exceedingly low mortality, considered as an operation, and that if performed at an early period of the disease there is a good chance of preventing further infection from the bacillus of tuberculosis from taking place. Castration certainly complies with one of the most urgent demands of modern therapeutics, namely, the eradication of the soil breeding the disease, when, of course, the affection has not been present for too long a period and has not extended to other parts of the body. Conservative surgery applied to the testicle is practically useless when the organ is affected by tuberculosis, and it allows the dangerous consequences to arise which the radical treatment directly tends to avoid.

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Abstracts of the Leading Articles of the Month.

The Clinical Value of Blood Pressure Determinations as a Guide to Stimulation in Sick Children.

H. W. Cook (*The American Journal of the Medical Sciences*) believes that by means of a modified Riva-Rocci sphygmomanometer the blood pressure can be taken for a guide for stimulation. The normal pressure during the first few months of life averages about 70 to 75 mm.; from six to twelve months it is 80 to 85 mm. During the second year a pressure from 80 to 90 mm. may be expected, and in the third year the range is between 90 and 100 mm. It does not rise much above 110 during childhood. For a child from three to ten years old, 85 mm. could be considered moderately low, 75 mm. low, and 65 mm. very low. The pressure runs very equally from day to day. A physiological rise of 5 to 10 mm. occurs after the ingestion of a bottle of 5 to 8 ounces. Crying, restlessness, or any manifestation of excitement will also often be accompanied by a similar rise in a healthy child.

The hypodermic administration of strychnin (1-400 grain to infants, one to sixteen months old, and 1-200 to children of two years) was followed by a rise of 10 to 30 mm. in 10 to 20 minutes. Six to eight hours is an excellent reaction time, and this becomes shorter as the patient becomes more profoundly toxic and exhausted. No

rise or a rise of a few minutes only occurred in a number of cases within twenty-four hours of death. Digitalin seemed to have a more immediate action than strychnin, rather more sure, and caused a higher rise in blood pressure, which, however, was maintained for a shorter time. The effects of alcohol for individual doses were not uniform, and the best effects would seem to be the result of repeated doses. Where the demand for a stimulant is only moderate it is best to start with alcohol in doses of five to thirty drops every two to four hours, as indicated. Infusions of normal salt solution showed no true stimulating effect aside from the local irritation.

He makes a plea for the use of the blood pressure chart as well as the pulse and temperature chart. While a certain blood pressure reading is no absolute indication of a patient's condition, the variations in blood pressure, numerically determined, constitute the best single guide to the intelligent administration of stimulants.

Nephrectomy for Renal Tuberculosis, as Illustrated by Two Cases.

I. N. Danforth (Asso. Am. Physicians) records the history and treatment of two cases of renal tuberculosis. Both cases were of long standing, and were complicated by severe and persistent bladder symptoms, which obscured the diagnosis, misled the attending physicians, and, therefore delayed all radical treatment. Other symptoms were renal pain, tenderness and tumor.

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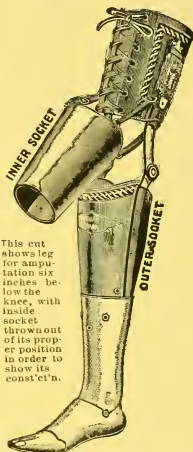
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faction; pyrexia; progressive emaciation; turbid and offensive urine, loaded with pus, but showing no tubercle bacilli; and the gradually progressive development of the condition known as "hectic." In each case, the healthy condition of one kidney was supposed to be proven by "segregation," after which the diseased kidney was removed. The laboratory or anatomical diagnosis of tuberculosis by the microscopical examinations of both sections and smears was established. At this writing, both patients seem to be in excellent health, and the examination of the urine of each is confirmatory.

The cases are published because they illustrate the difficulty of an exact diagnosis as to the nature of renal tumors, and because they seem to encourage the hope that nephrectomy offers a cure in properly selected cases of renal tuberculosis.

A New Operation for Puerperal Sepsis.

Swithin Chandler (Obstetrical Society of Philadelphia) describes his new operation for puerperal sepsis as follows:

Make an incision posterior to the cervix in the posterior vaginal wall; then pass a pair of long blunt pointed forceps, slightly curved, in the cervical canal, up into the cavity of the uterus; then puncture the posterior wall of the uterus in the centre near the top of the uterus. Then introduce with two fingers a piece or strip of iodoform gauze in through the posterior vaginal opening previously made, clasp the gauze with the forceps and drag the same through the uterine wall and out through the vagina. Repeat this by puncturing the uterus on each side, but posterior and just about the middle of the body of the same, drawing the gauze through the same as in the first attempt.

Thus one will see we treat the uterus as a thoroughly infected organ deserving heroic treatment. We feel that we have been and are justified in this procedure.

He then gave a few statistics regarding the mortality of other operations in puerperal sepsis.

The objections which he thought might possibly be offered to his operation were:

1. All cases are not those of virulent infection.
2. It causes additional injury to an organ infected.
3. Curettage and removal of membranes are often sufficient.
4. It may so injure the uterus as to interfere with labor.

In answer to these objections, he said:

Regarding the first objection it was admitted, and if we are prepared to take prompt measures we would not always advise its immediate undertaking.

Answering the second objection, it

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Dr. Stanley H. Graves, Associate,

Miss M. A. Newton, Superintendent.

makes more injury, but we do not hesitate to open an infection in other organs, and we have no more infection, and experience in this operation is similar to operation in other parts.

To the third objection, as to the first, we would answer, if we are prepared to perform operation immediately if required, well and good.

In answering the fourth objection, as yet he cannot say, but he does not believe it would have any bad results, especially after knowledge of how the uterus is treated by the inexperienced in curettage, removal of growths, etc.

In favor of the operation he claimed the following:

1. It is conservative.
2. It is by the experienced easily performed.

3. It is logical, because it treats the organ as in infected part, gives drainage to the uterus and those tissues and vessels shown by postmortem examinations to be affected.

4. The mortality is greatly lowered, and it gives far superior results so far, although its exact results must yet be proven by a larger number of cases than as yet I have practised upon.

The writer closed his talk with a report of a few cases operated upon in the manner above described, a description of the results obtained, etc.

Tubal Menstruation--Internal Hemorrhage from Ectopic Gestation Without Rupture of the Sac.

E. E. Montgomery (Obstetrical Society of Philadelphia) reports the history of this case in order to strengthen the argument contained in his paper presented before this Society at the October meeting, 1903, on "The Structures Taking Part in Menstruation." At this meeting a case of tubal menstruation was also reported by Dr. Bland. These two papers were written in collaboration. The history of the present case is as follows: The patient was operated upon for laceration of the cervix and a retrodisplacement of the uterus through the abdominal route. The day before the operation the patient's menstrual flow began, and in view of this fact, the author, therefore, carefully examined the Fallopian tubes to determine whether they actually took part in the menstrual process. His findings seemed to indicate that they do really participate in menstruation. In this case the tubes were darkened and congested. Pressure exerted from the uterine toward the abdominal end of the tubes caused a few drops of blood to appear at their external orifices, and also small dark colored clots were expressed. These were somewhat of the character found in menstruation. The

author regrets that a microscopical examination of these clots was not made, because of the possibility of their having been associated with an ovum, and he also regrets that he did not examine the ovaries for indication of recent rupture of Graafian follicles. The case is presented, as heretofore stated, as additional evidence that the tubes are active in the physiological process of menstruation.

In this contribution the author desires to point out the constant danger of tubal pregnancy, in that serious hemorrhage may take place from the gestation sac without fracture of its walls. The first class of cases in which serious hemorrhage may occur without rupture, is tubal abortion. Such a condition is usually followed by profuse and dangerous bleeding. The cavity is generally filled with blood which clots, and finally arrests the hemorrhage. Occasionally the separation of the fetal sac may not be complete but hemorrhage occurs from the partial separation which makes its exit from the abdominal end and causes extensive hemorrhage. Finally, the weakened circulation will result in the formation of a clot which arrests the hemorrhage sac saves the patient. The writer cites a case of tubal abortion. The patient had a characteristic menstrual history of pregnancy. She missed two periods, and upon coming under observation had been bleeding for several days. This bleeding was attended with severe pain in the lower abdomen. The patient at times had attacks of cerebral circulatory disturbance. Examination revealed a resistant mass to the right of the uterus. Diagnosis of ectopic gestation had been made, though the author from the appearance of the patient did not think the shock sufficient to indicate either rupture or tubal abortion. The patient was operated upon, and on entering the abdomen, the right tube presented a sac occupying the outer half of the tube, which was filled with clot but showed no rupture. The fluid had escaped from the end of the tube, but an abortion had not really taken place. The other class of cases to which the author calls attention are those in which the villi of the chorion erode and penetrate the tubal wall, and even its serous covering, and thus bleed from the extremities into the peritoneal cavity. These projections are so small as to often only be perceptible by the microscope, but yet cause dangerous hemorrhage. He cites a case in which this condition was well exemplified. The patient was admitted to the hospital, quite anemic looking, complained of soreness over the abdomen, but had no marked tenderness or rigidity. Examination revealed a retroverted uterus, but little else could be deter-

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mined. Blood examination showed red blood corpuscles 3200,000, white 720,000, hemoglobin 70 per cent. Her temperature ran from 99 to 100 deg.; pulse 90 to 104. This patient had passed one period but a few days when she was seized with severe pain in the lower abdomen, which was followed by bloody vaginal discharge. This had continued until her admission to the hospital a month later. The patient would at times have rather severe attacks of pain in the lower abdomen, particularly when moving about. At times she also became exceedingly faint and was obliged to remain in bed. She was operated upon, and upon entering the abdomen it was found filled with fluid and clotted blood. The right tube was occupied with a sac about the size of a small orange, which ruptured on being delivered, allowing the amniotic fluid to escape, and not blood. Examination of the sac did not reveal any seat of rupture, except that caused by delivery, but on its superior surface several small, dark colored hemorrhagic areas were noted. These, upon opening the sac, were found to be immediately over the cord orx at the placental site. Microscopical investigations revealed that these dark colored areas were the seat of hemorrhage, and were caused by the villi eroding and penetrating the tubal wall.

Bathing During the Menstrual Period.

J. C. Edgar (*Med. Age*) says: (1) All forms of bathing during the menstrual period are largely a matter of habit, and usually can be acquired by cautious and



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gentle progression; but not for every woman does this hold good, and surf bathing where the body remains chilled for some time should always be excepted. (2) A daily tepid sponge bath (85 to 92 deg. F.) during the menstrual period is not only a harmless proceeding but is demanded by the rules of hygiene. (3) In the majority of, if not all, women tepid (85 to 92 deg. F.) sponge bathing after the establishment of the menstrual flow, namely, second or third day, is a perfectly safe practice. (4) Furthermore, in most women the habit of using the tepid shower or tub bath after the first day or two of the flow can with safety be acquired.

Open Air Treatment of Tuberculosis.

Fisher (*Med. Press and Cir.*) states that in Germany where statistics are available, 85 per cent. of patients are improved, 16 per cent. unimproved, 0.8 died; only one-sixth did not recover their power of work. Those in the so-called first stage, with consolidation of one lobe or two half-lobes, without cavity, show the best results. The statistics of English sanatoria are not available, but those published show similar results. Most cases except those in an advanced stage show great improvement. The early cases, as a rule, leave the sanatorium with no symptoms of the disease, slight physical signs, absence of bacilli in sputum, and robust in appearance. In more severe cases there is reduction of fever and pulse rate, less cough or night sweats, better breathing, and gain in weight and muscular power.

It is quite certain that results will be better still, as more suitable cases are sent and the unfit eliminated. The limitations of the treatment and the advantage of sending cases in the early stage are more generally recognized. Procrastination or a late diagnosis do not enhance the prestige of the medical adviser.

Many of those who complete sanatorium treatment are fit to enter again on the toils and joys of life, provided they follow some outdoor calling, free from arduous exertion or strain. Some have even gone back with impunity to employments where an open-air régime is impossible. Others are unfit for work, owing to lack of robustness, but with care and out-door methods they may live to old age. Occasionally the improvement is transient, but this is mainly due to carelessness, over-exertion, or bad hygiene.

Sanatorium treatment is no specific against tuberculosis. Many details are mainly empirical, but as its main principles inculcate a return to a natural life, instead of the artificial modes of so-called civilization, even for its educational effect

it is of great value. Hygienic treatment is beneficial for many other conditions of ill-health besides tuberculosis. Those of us who live the free open-air life, and who see the good effects of it on servants, nurses, and others, would not readily return to the doubtful blessings of ordinary life. The results of this treatment of tuberculosis far surpass any other, in the cure, arrest, or alleviation of one of the most prevalent of the "ills that flesh is heir to."

A New Sign of Pleuritic Effusion.

Grocco, in the *Med. Press and Cir.*, has published a new symptom of pleuritic effusion, easy to discover and of considerable value.

When a liquid of any kind is present in the pleura, a dull zone of triangular form can be found by percussion on the opposite side. The internal edge corresponds to the vertebral spinous apophyses; the base, from one or two inches in length corresponds to the point where the normal thoracic sonority ceases, while the external edge follows an oblique ascending line, intersecting the internal side of the triangle at the upper limit of the effusion. This dull surface varies in extent with the quantity of liquid, and diminishes when this liquid tends to absorption. The dullness is more marked near the median line and the base of the triangle; a decrease in the vesicular murmur is also perceived by auscultation.

Badnel and Siciliano experimentally studied Grocco's symptom and its varieties by slowly injecting liquid into the pleural cavity of corpses, and gave the following explanation—the pleural *cul de sac*, distended by the effusion, is displaced and, passing in front of the vertebræ, exceeds more or less the median line; it thus pushes before it the mediastinum into the opposite side of the thorax. At this point dullness will consequently exist, provoked by the presence of liquid contained in the distended pleural *cul de sac* and the displaced thoracic organs. The compression by the displaced heart of the lung, which becomes more dense, also favors the production of the dullness.

The mediastinal organs are much more displaced by effusions on the right side than on the left. The aorta, as everyone knows, the most important organ of the mediastinum, is, when in normal position, on the left of the median line. Consequently in effusion into the right pleura, the artery becomes easily displaced toward the left, bringing with it the whole mediastinum; where the left pleura is affected, the aorta can only be pushed a little toward the right, while the other organs sliding over it fall to the right side of the thorax.



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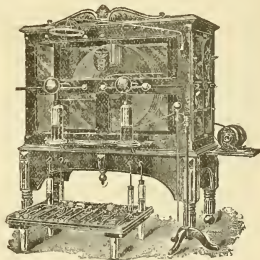
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phites of lime and soda it offers to the pro-
fession a reconstructive of great value.—
St. Louis Medical Review.

Mississippi Valley Medical Association.

The officers elected at the 30th Annual Meeting of the Mississippi Valley Medical Association, held at Cincinnati, O., October 11-13, are as follows: President, Bransford Lewis, M. D., St. Louis; First Vice-President, Frank Parsons Norbury, M. D., Jacksonville, Ill.; Second Vice-President, J. H. Carstens, M. D., Detroit, Mich.; Secretary, Henry Enos Tuley, M. D., Louisville, Ky.; Ass't Secretary, John F. Barnhill, M. D., Indianapolis, Ind.; Treasurer, S. C. Stanton, M. D., Chicago, Ill.

Next place of meeting Indianapolis, Ind., October, 1905.

The following letter with attached petition has been received from Dr. Bryant by the North Carolina Members of the House of Delegates A. M. A., Drs. Way and Anderson and is of interest to the profession at large.

No. 32 West 48th Street, }
New York, N. Y. }

Dear Doctors:

I am again calling the attention of the members of the House of Delegates to the need of active effort on their part, in securing the weight of co-operative action of the members of the American Medical Association in gaining a national incorporation of the organization at Washington the coming winter. The following is the text of the now proposed charter of incorporation as just constructed by Judge Ray, who is still giving us the benefits of his long experience in such matters. (See report of Committee on National Incorporation Jour. Amer. Med. Ass'n, June 11th, 1904.)

"Be it enacted by the Senate and House of Representatives in Congress assembled:

Sec. 1. That Robert M. O'Reilly, M.D., Presley M. Rixey, M.D., Walter Wyman, M.D., E. H. Gregory, M.D., Henry O. Marcy, M.D., Nicholas Senn, M.D., George M. Sternberg, M.D., J. M. Matthews, M.D., W. W. Keen, M.D., C. A. L. Reed, M.D., J. A. Wyeth, M.D., Frank Billings, M.D., J. H. Musser, M.D., T. J. Happel, M.D., Miles F. Porter, M.D., E. E. Montgomery, M.D., W. W. Grant, M.D., H. L. E. Johnson, M.D., A. L. Wright, M.D., William H. Welch, M.D., M. L. Harris, M.D., and Philip Marvel, M.D., and their successors, are hereby made and constituted a body politic and corporate by the name American Medical Association, with perpetual succession and power to take, for the purposes of its incorporation, by devise, bequest, grant, gift, purchase or otherwise, and hold or convey both real and personal property, and transact business, anywhere within the United States.

Sec. 2. The object and purpose of such corporation shall be to promote the science and art of medicine throughout the United States.

Sec. 3. Such corporation shall have power to make by-laws, rules and regulations, and choose officers for its government and the attainment of its purposes."

You will please to arrange it with your colleagues of the House of Delegates of your own State, that the president and secretary of each county organization of the State receive promptly a copy of the enclosed petition along with an urgent request that the signatures of the members of each county organization be promptly signed thereto and returned to you, (that you may know at once of compliance with your request) for compiling and forwarding to me not later than November 1st, 1904, for presentation at Washington at the opening of the Congressional session. Many of the State organizations have already taken active steps in the matter in accordance with the spirit of the following resolution passed at the last meeting of the American Medical Association at Atlantic City:

"Resolved, That the officers and the members of the House of Delegates of the American Medical Association now in session at Atlantic City, do hereby pledge their loyal support and earnest efforts in aid of securing national incorporation of the American Medical Association by a special Act of Congress."

Yours truly,

JOSEPH D. BRYANT, M. D.,
Chairman Committee National Incorporation.

P. S.—It seems entirely fitting to me that other reputable physicians who are not members of the Association be encouraged to aid us in the matter by signing their names to the petition and otherwise giving a hand.

J. D. B.

Gentlemen of the Judiciary Committee of the Senate and House of Representatives of the United States of America:

We, the undersigned, members of the medical profession throughout the United States, most respectfully request the speedy enactment of the following proposed bill incorporating the American Medical Association.

"Be it enacted by the Senate and House of Representatives in Congress assembled:

Sec. 1. That Robert M. O'Reilly, M.D., Presley M. Rixey, M. D., Walter Wyman, M. D., E. H. Gregory, M. D., Henry O. Marcy, M. D., Nicholas Senn, M. D., George M. Sternberg, M. D., J. M. Matthews, M. D., W. W. Keen, M. D., C. A. L. Reed, M. D., J. A. Wyeth, M.

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Sec. 2. The object and purpose of such corporation shall be to promote the science and art of medicine throughout the United States.

Sec. 3. Such corporation shall have power to make by-laws, rules and regulations, and choose officers for its government and the attainment of its purposes."

The proposed charter declares the purpose of the Association. It is non-political, and has for its main object the promotion of medical science which can best be accomplished by unity of purpose and action. Such Association will bring together annually the best and most accomplished medical men of the Nation and prove, we believe, beneficial to all the citizens of our country.

Respiratory Tract: Affections, Symptoms and Treatment.

The average physician is frequently vexed in finding a condition which resists his best efforts to bring about a cure. This holds good in almost every disease at some time or other, but particularly in affections of the respiratory tract, where there may be a great variety of symptoms in several cases of the same disease.

Almost every physician has some favorite prescription for coughs, bronchitis, laryngitis, etc., which he uses until suddenly it seems to lose its efficacy—why, no one knows. Then another remedy takes its place until it, too, fails to give the desired result. It is rarely that one finds a cough remedy which will be consistently good in the majority of cases. Theoretically there appears to be a well-founded objection to the use of cough syrups in general, but nevertheless there are times when nothing else gives satisfaction, therefore, the physician pins his faith to that remedy from which he and his patients derive the most good. It is not always easy to find such a remedy, but when it is once found, it is equally difficult to dispense with, and often the physician is almost compelled to resort

to a routine treatment. In such cases, of course, he wants the best.

There are constantly being placed on the market new formulas for affections of the air passages. Some of these formulas are of undoubted benefit in some cases, but usually it will be found that the results are far from satisfactory. Many of them cannot be taken when there is any gastric complication, as is sometimes the case, because of consequent nausea and vomiting. Others seem almost invariably to act as cardiac depressants and are highly objectionable for that reason. With the advent of heroin, however, these disagreeable features have, to a great extent, been avoided. Heroin, in the vast majority of cases, can be tolerated by even the most sensitive stomach, and, if any disturbance should occur, it can easily be obviated by decreasing the dosage and then gradually resuming the previous amount. Heroin can be prescribed, in cases which are complicated by an enfeebled heart, without danger of depressing effects. As compared with codeine, its sedative action on the respiration is much more powerful. The fatal dose of heroin is said to be one hundred times the efficacious dose, while with codeine the efficacious dose is one-tenth of the fatal dose. In other words, heroin is ten times safer than codeine, and can be given in much larger doses, if necessary, without danger. It appears to exert a specific action on the center of respiration without causing disturbances of any other organs or centers, and there is no danger of acquiring any habit by its use.

In phthisical patients the well known lack of appetite and intolerance of various foods render it imperative to give remedies which will not in any way interfere with the digestive functions, while at the same time controlling or alleviating the cough and other distressing conditions.

Some time ago my attention was called to a preparation composed of a solution of heroin in glycerine, combined with expectorants, called Glyco-Heroin (Smith). Each teaspoonful of this preparation contains one-sixteenth grain of heroin by accurate dosage. It is of agreeable flavor, therefore easy to administer to children, for whom the dose can be easily reduced with any liquid, or by actual measurement. It possesses many advantages not shown by any other preparation I have used, and has none of their disagreeable features.

In citing some of the cases treated with this remedy I shall not go into a minute description of any case, but briefly state the conditions which existed and the results obtained, which were uniformly good.

Case 1. S. B., aged 16. Caught a severe cold while traveling. This developed

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Listerine Dermatic Soap

(FOR USE IN THE ANTISEPTIC TREATMENT OF DISEASES OF THE SKIN)

Listerine "Dermatic" Soap contains the essential antiseptic constituents of thyme, eucalyptus, mentha and gaultheria, which enter into the composition of Listerine. The quality of excellence of the soap-stock which serves as the vehicle for this medication, will be readily apparent when used upon the most delicate skin, and upon the scalp.

Listerine "Dermatic" Soap contains no animal fats, and none but the very best vegetable oils enter into its composition; in its preparation unusual care is exercised, and as the antiseptic constituents of Listerine are incorporated with the Soap after it has received its surplus of unsaponified emollient oil, they retain their peculiar antiseptic virtues and fragrance.

A sample of Listerine Dermatic Soap may be had upon application to the manufacturers—

Lambert Pharmacal Co., St. Louis,
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Be assured of genuine Listerine by purchasing an original package.

into an unusually severe attack of bronchitis with mucous rales, pain, cough and some slight fever. Prescribed Glyco-Heroin (Smith) one teaspoonful every two hours, decreased to every three hours. After a few doses were taken there was a decided improvement, the respirations were slower and deeper, the expectoration freer and the temperature normal. In a few days the patient was practically well and able to return to school. No medicine except Glyco-Heroin (Smith) was given and the results from its use were excellent.

Case 2. W. L., aged 31. Acute bronchitis. Painful cough, with difficult expectoration, particularly when in a reclining posture. Glyco-Heroin (Smith) in teaspoonful doses every three hours gave speedy relief and a cure was effected in a few days.

Case 3. S. W., aged 60. Chronic bronchitis. Had coughed for years, with expectoration of a thick yellow purulent and very offensive matter. Had lost flesh gradually until about twenty pounds below usual weight. No appetite, very constipated, pains all over chest, night sweats and insomnia. Patient on the verge of nervous prostration and greatly weakened. She was given bromides, a tonic, and Glyco-Heroin (Smith), the latter in the usual dose at intervals of two hours. The first few doses were not well borne, as they seemed to cause some nausea, but by giving a smaller dose and then gradually increasing it, tolerance was soon obtained, and the results were remarkable. The cough and expectoration greatly decreased, the appetite improved and the patient became much better in every way. The treatment was continued as before, except that the Glyco-Heroin (Smith) was given every three hours. In three weeks the patient was eating almost everything she pleased, and sleeping well. The night sweats had stopped, together with the cough, and, as the patient expressed it, she "felt like another woman." At present she is in perfect health and needs no medicine except an occasional laxative.

Case 4. B. E., aged 26. Severe bronchitis accompanying an attack of influenza. Various remedies were tried in this case, with negative results, until Glyco-Heroin (Smith) was given in teaspoonful doses every three hours. In a short time decided relief was obtained and the cough stopped permanently.

Case 5. R. L., aged 6. Capillary bronchitis with pains over chest, cough and difficult expectoration. Glyco-Heroin (Smith) administered 15 drops every three hours. After taking a few doses the condi-

tion was much improved, and a speedy return to perfect health followed.

Case 6. W. H., aged 5. Whooping cough. Spasmodic paroxysms of coughing, sometimes being so severe as to cause vomiting. Tenacious mucus was present, requiring great expulsive effort to loosen it. There was little fever, but the patient was much prostrated and weakened by the cough. Glyco-Heroin (Smith) was given in 10 drop doses every two hours with good results. This was combined with hygienic treatment, the patient being given as much fresh air as possible. In a few days the condition was much ameliorated, the cough under fair control, expectoration was freer and easier to raise, and convalescence uneventful. The case was discharged cured and there were no unpleasant sequelæ, the patient at present being in perfect health.—Dr. Arthur B. Smith, Springfield, O.

Gacodylic Medication With Women.

One of the most interesting points in the communication of Prof. Gautier to the Academy of Medicine, was that which proved the close relation existing between the presence of arsenic in the organism, and the menstrual function. Indeed, while noticing that under the influence of Cacodylate of Soda the hair of women was becoming more abundant—which is a direct consequence of the exciting action of arsenic on the epidermic appendixes—he noticed also less irregularities in the menstrual periods. A point that very well confirms the fact that the menstrual blood always contains arsenic (0 milligr 28), while the common blood does not contain any. This role of arsenic in the capital manifestation of woman life was well set forth by M. Gautier in the following lines:

"Thus arsenic and iodine are normally eliminated each month with the menses, and this flow has for its origin and purpose a sort of depletion of the vital portions of the economy which are rich in phosphorus, and more especially of those which are elaborated by the thyroid. After having been elaborated in the thyroid, the particular nucleo-proteids formed in that gland are at all times carried away in the lymphatics and deposited in the blood, to perform there the part of excitants of vitality, and of cell reproduction. These thyroidian proteids nourish the skin and its appendixes which are always arsenical. But each month their surplus passes out with the menses, except in cases of pregnancy, when the globulines and the thyroidian nucleo-proteids are utilized by the body of the new being, which needs phosphorus, iodine, and arsenic of such exceedingly plastic form."

It will not be surprising, that among the

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Abdominal Surgery With Special Reference to Preparation and After-Treatment.*

By W. P. Whittington, M. D. Asheville, N. C.

Realizing the great responsibility which every surgeon assumes in opening the abdominal cavity, and having met and been puzzled by the conditions found and the results following such operation, and realizing the difficulty of preventing and relieving said conditions are my reasons for presenting this paper.

Having a patient suffering from any condition requiring that the abdomen be opened for the cure or removal of said condition, the first thing to do is to make a thorough examination of the patient's general condition. This examination should always be made with as much care and precision as the nature of the individual case will permit. We should carefully note the general appearance of the patient. The skin, eyes, nose, mouth, tongue, foci and throat should be inspected. The heart and lungs should be examined by auscultation and percussion. The stomach, liver and kidneys should be examined by percussion and palpation. The urine should be examined by chemical and microscopic methods, the character of the feces should be observed, and where there is any special indication the blood should be examined. Having by a careful and thorough examination ascertained the constitutional condition of the patient and obtained a knowledge of the condition of all the special organs, we may proceed with the preparation, according to the demands of the case. In emergencies where an early operation is necessary to save the life of the patient, we will be able to do nothing more than give a hurried purge or an enema, and proceed with the local preparation and operation; but even then, being familiar with all the existing conditions, we will be able to avoid the mishaps that unavoidably follow rushing into an operation without a thorough knowledge of the patient's condition. If the case is not an emergency we should proceed with such treatment as is necessary to put our patient in the best possible condition to stand the operation. If the general health is bad and the circulation poor, a systemic and heart tonic for a few days will often put the patient in a better condition. If the patient is very obese

and we expect to operate for hernia, or a chronic condition of any of the abdominal organs, we can put our patient in much better condition by giving such treatment as will reduce the obesity, and relieve the intra abdominal pressure. If the urine is not normal such treatment should be given as the condition indicates. Special attention should be given to the alimentary canal, and all food which has a tendency to form gasses, should be avoided. The digestion should be brought up to the best possible standard, and the excretory organs should be put in good condition by appropriate treatment. I do not believe in keeping the patient in long and unnecessary suspense by meddlesome treatment and foolish delay, no more than to rush into an operation without proper preparation. Where we have several days at our disposal, all plethoric or full habit patients should have a laxative every morning for a week before the operation. The three days immediately preceding the operation, patient should be allowed nothing but sterile food. On the morning of the day before the operation, two ounces of castor oil should be administered by the mouth. In the evening the patient should have a thorough tub or sponge bath, the field of operation and a wide area around it should be scrubbed with green soap and water with a brush, and carefully shaved, avoiding such violence as will cause abrasions of the skin. A green soap poultice should now be applied and allowed to remain for two hours. All the soap should be carefully washed off with a gauze and sterile water, and a gauze pad saturated with a 1-2000 solution of bichloride of mercury should be applied and should remain until the following morning. If the patient is a woman and there is a possibility of opening the vagina for any purpose, the vagina should be douched with a 1-2000 bichloride solution once a day for several days, and on the evening before the operation the vulva should be included in the preparation of the site of operation as above. On the morning of the operation patient should have a large enema, which should be expelled as effectually as possible. The vagina should be well scrubbed with soap by means of a gauze in a sponge holder or dressing forceps, followed with sterile water and a 1-2000 bichloride solution. If the operation is to be on the walls of the stomach, or there is stercoraceous vomiting, the stomach should be thoroughly washed out

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

with a boric acid solution on the morning before the operation. After the patient is on the table the pad should be removed and the abdomen again scrubbed with sterile water, sterile tincture of green soap or other sterile soap preparation, which should be again followed by sterile water with a gauze; ether, and lastly a 1-1000 bichloride solution. The catheter should be used a short time before all abdominal operations.

What I will say about the operation itself will be with reference to its results and its effect on the after treatment more than the operation itself. All abdominal work should be done with skill, dispatch, precision and gentleness, avoiding too much haste and roughness, but at the same time, avoiding criminal tediousness.

Do not waste too much time trying to stop trifling hemorrhage. Do not handle the intestines unnecessarily, nor manipulate organs not concerned in the operation. Do not allow assistants to handle the field of operation more than is absolutely necessary, as that would add just so many more chances for infection. When the operation is finished the wound should be closed or packed and drained as the conditions require, and dressing applied accordingly. The patient should then be put in a bed made comfortable by warm blankets, and hot water bottles applied if necessary, but overheating to such an extent as to produce exhausting perspiration should be avoided. Patient should be allowed to assume the most comfortable position in bed possible, which should be left to his own inclinations. This will usually be found to be on the right side with the legs well drawn up. This position will be favorable to drainage in appendix and liver operations, but we will have to be careful when we have open wounds not well packed, for fear of protrusion of the intestines. After operations on the pelvic organs, the best position will be on the back with the head of the bed slightly elevated. Even in these cases patient should be allowed to turn on either side if she becomes uncomfortable. The conditions naturally following laparotomies are nausea from the anaesthetic, pain, thirst, and sleeplessness. To prevent nausea the patient should be handled carefully when being removed to bed, and should be allowed to sleep quietly as long as inclined. Here the right side position favors drainage of the stomach and prevents vomiting. If on awakening, vomiting begins, patient should be given half pint of hot water in which has been dissolved twenty grains of bicarbonate of potassium. This will sometimes increase the nausea and cause free vomiting which will be of benefit by

washing out any ether or other offensive material in the stomach, and the vomiting may cease. If the vomiting continues and there are no contra indications the patient may be propped up in the semi-sitting position which will sometimes be effectual. Three or four drops of tincture of iodine in half pint of hot water is sometimes very effectual. Small doses of morphia hypodermically will sometimes stop the vomiting quickly and permanently. Twenty to thirty grains of bromide of potassium in an enema of two ounces of water will often do good. Strong essence of peppermint on a lump of sugar may be slowly sucked. Counter irritations in the shape of cloths wrung out of very hot water, mustard or fly plasters are worth trying. In cases of very severe and persistent vomiting, a thorough lavage with warm water by means of a soft rubber tube will often be effectual. This should be continued until the water returns clear. If the pain following operation is not relieved by position, a hypodermic of morphia should be given, preferring to give a small dose and repeat in an hour if not effectual. Morphia should not be given after the first twenty-four hours, except in extreme cases. Sleeplessness not due especially to pain should be relieved by six to ten grains each sulphonal and trional which may be repeated once or twice at intervals of two hours. Thirst may best be relieved by giving plenty of hot or cold water to which may be added a little bicarbonate of potash or soda. An enema of six to eight ounces, or as much as the bowels will retain, of normal salt solution, is very useful in allaying thirst when water cannot be kept on the stomach.

If everything goes well, pain, thirst, nausea and restlessness should have passed off by the second day after the operation. We should now make an effort to get an action on the bowels by giving some mild laxative. As a rule I prefer half grain doses of calomel every half hour until four grains are taken or the bowels act. If this is not effectual and there are no contra indications I use an enema, and follow if necessary with sulphate or citrate of magnesia until the bowels act sufficiently. Food must be given cautiously, avoiding such things as cause flatulence, which is the chief objection to milk. Where this is the case, a good food is made by pouring boiling water on half its bulk of chopped raisins which should be stewed about two hours and filtered. This contains the highly nutritive properties of grape sugar and is readily absorbed as it requires no digestion. Egg-albumen is made by beating the white of four eggs with a pint of water, to which may be added sugar and

lemon or other flavoring. Two pints of this may be taken in twenty-four hours. Plasmon is a pure albumen prepared from the caseinogen of milk, and is one of the best forms for administering proteids. It is a white powder and may be mixed with water in the proportion of three teaspoonfuls to the half pint of water, boiled for two minutes and given in portions of two ounces every two hours. The plasmon or egg-albumen may be combined with the grape sugar in the form of raisin tea, and makes an excellent food for the first few days. It combines both proteids and carbohydrates in an easily digestible form. After three or four days food can be increased gradually as the condition allows. The complications following laparotomy and requiring special treatment are shock, meterism, peritonitis, stitch suppuration, intestinal obstruction, intestinal paresis, and fecal fistulae. We recognize the fact that shock is a condition in which we have a more or less profound lowering of the general blood pressure. Whether the shock is the result of severe injury, prolonged operation or loss of blood is of little importance in dealing with individual cases. Shock due to hemorrhage will react best, while that due to prolonged operation, associated with injury of, or much handling of the abdominal organs will give less satisfactory results to treatment. In the treatment the patient should be kept warm by the application of blankets and hot water bottles, avoiding the extreme of causing active perspiration, which favors rather than relieves the shock. The foot of the bed should be raised a foot above the head, and there should be no pillow under the head. Stimulants should be used cautiously because to urge the heart to greater effort and rapidity of action without supplying it something to work on will only hasten the time of exhaustion. Where the shock is due to the vaso-motor centers, and not to the loss of blood, stimulants may do good. Where the circulation is very poor, strychnia and digitalin should be given, but with caution, for fear of getting the accumulative effect after the shock has been relieved. Alcohol is of doubtful utility as it produces vaso-dilation and its effects are transient. If given at all it should be given in nutritive enemata or in saline transfusion. Rectal nutrient enemata containing forty grains of carbonate of ammonia are often beneficial. Adreneline will raise the blood pressure, but must be repeated at short intervals, as its effects are transient. It may be given hypodermically or added to the transfusion fluid. The transfusion of normal saline solution is undoubtedly the best treatment for shock, especially

where there has been considerable loss of blood. It will nearly always restore the general blood pressure, and give the heart something to expend its energies upon. The volume of circulation is increased in the large vessels and the heart quiets down and the patient is quickly revived.

The solution should be given at a temperature of 110 to 120 degrees, and two or three pints should be allowed to flow slowly into the circulation. This should be repeated at short intervals if necessary, until the blood pressure is sustained. If dyspnoea occurs during a transfusion it should be stopped until the dyspnoea disappears, when it should be continued slowly as before. Where the shock is slight, enemata of hot saline solution may be made use of or the fluid may be injected or allowed to flow by gravity into the tissues under the breasts or on the back. If the shock is severe these methods should not be relied upon, as the absorption will be so slow as to be of little effect. Artificial respiration is often beneficial in giving time for other methods to have effect. Bandaging the lower extremities and abdomen or lower part of the body will force more blood to the heart and rapidly raise the blood pressure. Meteorism is one of the most dreaded complications following laparotomy. Whatever may be its cause our object must be to prevent its outset by appropriate means. One of the best means of accomplishing this end is the passing of a tube through the splinters into the rectum. This should remain in the bowels one hour in every six. It is a good plan, as soon as distention begins, to administer an enema of one ounce of turpentine to a pint of gruel. If this does not succeed a large enema of castor oil or sulphate of magnesia and glycerine should be given, and calomel, castor oil or sulphate of magnesia should be given by the mouth. The condition will often yield to these combined methods but in some cases it will not; and as a last resort the abdomen may be opened and the bowels perforated with a possibility of restoring its normal condition.

Peritonitis being one of the most common causes of meteorism will require virtually the same treatment. Stitch abscess is sometimes due to too much tension. In this case the stitch should be divided, the pus should be removed and the suppuration, as well as the stitch itself, should be rendered as nearly aseptic as possible before it is removed. Sometimes stitch abscesses burrough far out between the abdominal layers and give considerable trouble. In these cases drainage should be made as free as possible, and sinuses not laid open may be injected with a 5% solu-

tion of carbolic acid, after which, if there is no foreign body in them, they will readily heal. If after free drainage and antiseptic treatment a sinus remains, it should be opened up to the bottom, any foreign body removed and all pyogenic membrane scraped away. Intestinal obstruction may complicate recovery from laparotomy and most frequently follows operations on the appendix or pelvic organs. It usually begins about five or six days after the operation, after the bowels have acted and everything seems to be getting on well. It generally begins with colicky pains, distension and nausea. The constipation is either complete from the beginning or may become so in a few hours. As soon as symptoms appear a large dose of epsom salts should be given. Turpentine enemata should be given and the salt repeated every two hours until purging begins or until it is evident that it will not.

The patient may be placed in the modified trendelenburg position with the hope that gravity will pull the intestine loose from its adhesions, or straighten out any kinks that may exist. Too much time should not be wasted and if these means fail, the abdomen should be opened and the obstruction removed by proper operation.

Paralysis of a section of intestine is rarely a cause of obstruction, and most often follows operation on the appendix or intestine itself. I have had only one case which followed resection of fifteen inches of gangrenous intestine, caused by strangulated umbilical hernia. One of my colleagues had a case following operation for appendicitis in which there had been obstinate constipation and much vomiting. If the paralyzed portion of intestine is very short and the patient is in good condition, the paralyzed portion may be resected. The better plan is to form a fecal fistula at the upper point of the paralysis, which will allow the bowel to regain its activity. If total obstruction persists after the patient's condition has sufficiently improved the abdomen should be reopened and the healthy intestine united at the most advantageous points. Fecal fistula usually close in a few weeks or months. Closure can be hastened by keeping patient in bed in such position as favors the passage of intestinal contents by the natural route. The opening of the skin should be kept well open to prevent pocketing. If the fistula does not close in about six months, or if the obstruction becomes so great that all the fecal material passes through the wound, the abdomen should be opened and the fistula closed or such anastomosis made as seems best.

Finally, when fully recovered, patient

should be supplied with a proper abdominal bandage and allowed to get up.

A Case of Sub-Normal Temperature Following Malarial Fever.*

By J. D. Roberts, M. D., Mt. Olive, N. C.

This case is reported rather for the rarity of the points observed and with a hope of having some light thrown upon the manifestations shown than for anything new or original, except perhaps the grouping of the symptoms.

Leroy W. is five years old, rather under size and strength, but has always been fairly healthy, except a disposition to take cold easily. Father is healthy and of good physique; mother is of nervous temperament, more intensified in its manifestations since the birth of the patient, the only child brought to term.

I saw him first on the 10th of this month and secured the following history: Parents live in a neighboring town and three weeks since child had what his attending physician diagnosed as catarrhal fever, lasting twelve days. Came to Mt. Olive on a visit three days after being relieved of fever. Some rise of temperature was noted on the 6th inst., just eight days since last fever, and a physician called on the 7th. I was asked to see him in the absence of the attending physician on the 10th. He had on the 8th and 9th calomel in broken doses and quinine, also a liquid marked fever mixture which reduced the temperature very effectually but left the patient much depressed.

Present condition, 9 a. m. on the 10th inst.: Tongue covered with a very heavy white coating rather flabby, eyes congested, sallow complexion, foul breath, bowels open from calomel of the day before, liver slightly enlarged, temperature 102 deg. F., pulse 110, other examination negative. Had very high fever yesterday, subsiding with perspiration during the night. My diagnosis was malarial fever; treatment was mercury, padophillin, leptandrin,¹ to be followed by quinia when temperature subsides to 100 degrees or lower; sponging if temperature goes to 103 degrees. Temperature rose to 103 degrees by 4 o'clock p. m., reduced readily with sponging and to normal at by 3 o'clock a. m. of the 11th inst. By an oversight or misunderstanding only 4 grs. of quinia was given and temperature commenced to go up at 8 a. m. and at 10 o'clock was 101 degrees and rose to 103 during the afternoon. Between 3 and 8 o'clock a. m. on the 12th inst. patient had 12 grs. quinine, and at 10 a. m.

*Presented to the Medical Society of North Carolina at the Raleigh meeting, May 23-26.

temperature was 98 1-5. Left mixture of pepsin and hydrochloric acid. At 12 o'clock midnight, I was called and found a temperature of 95 degrees, pulse 140 and very feeble, extremities cold, face drawn, and patient disposed to be drowsy. Active treatment with whiskey, digitalis, nitro-glycerine and strychnia brought about reaction in the circulation at once and the pulse was 95 full and regular in an hour. Temperature commenced to go up at 2 a. m. and gradually rose till 8 a. m., when it was normal.

Treatment. — Ol-Terbinth, hydrochloric acid and pepsin, and heart pill of strychnia, nitro-glycerine, strophanthis and digitalis, as indicated by pulse.

The first observation after this was at 10 a. m., when the thermometer registered 97 4-5, and at 11 p. m. it showed a temperature of 95 1-5 degrees, commencing to rise between one and two o'clock the next morning, reaching normal by 8 or 8:30 a. m.

This has been the case from then until my leaving home on the 22nd with only slight variation. Somewhere between 8 and 12 o'clock a. m. the temperature will begin to fall, generally reaching its lowest limit by 11 p. m., remaining stationary for one to three hours, then going up to normal by 8 a. m. or earlier, once as early as 5 o'clock a. m. It has followed the periodicity of malarial fever and the change in the temperature from normal was similar except the fall was not as rapid as is the rise of temperature in the pyrexia of malaria and the rise to normal is more rapid than is the reduction in typical fever of malaria. The temperature has not gone lower than 95, generally after the first two days 95 3-5 to 96 2-5. It has gone above normal only once, on the 19th inst. at 9 o'clock a. m. it registered 99 1-5 degrees, but commenced to fall immediately afterwards.

Treatment has had no appreciable effect upon the change in the temperature. Strychnia is required to keep the heart's action steady, which it does in small doses, the pulse rarely going over 90 and generally strong and regular. Atropine was given two nights for cold sweats. Bowels for the first six days were slightly loose, two or three billious discharges a day. Purgatives have been given once or twice recently. The tongue has never been entirely clean. The digestion is rather weak and care is required in his diet.

Since the 14th there has been a steady improvement in the boy's strength, flesh and general appearance. During the day he is active, bright and cheerful, while the temperature is down he is very sluggish. His appetite is better than his digestion.

Quinine was given freely for three or four days with no effect. Muratic and nitro-muriatic acids, calasaya and iron, arsenic, digitalis, strychnia, nux vomica, etc., have been tried alone and in various combinations. So far as I am able to see, none of these are of any utility, except the strychnia keeps the heart's action below 95 regardless of the temperature.

No blood examination has been made to confirm my diagnosis of a malarial origin of this trouble.

Sub-normal temperatures of varying degrees and from various causes are not uncommon. A quarter of a century ago it was considered to indicate collapse, and even now we had rather not see it in our patients. Da Costa says it may fall to 89 degrees in cholera. Osler, in case of alcoholic intoxication, reports a fall to 75 in one patient.

It falls in the beginning of peritonitis; it is common during profound shock, and after severe loss of blood; it usually accompanies alcoholic intoxication and long continued exposure to cold; it is found occasionally after fevers ending by crisis; sometimes seen in cholera infantum and cholera morbus; sunstroke, hysteria, tubercular meningitis and confusional insanity have all presented cases of it; poisons, especially by carbolic acid, gives examples of it, the later recording one case of 83.9 degrees.

Osler says that in the algic or adynamic form of malaria, the temperature may be normal or sub-normal and gives history of one patient treated at Johns Hopkins Hospital with a temperature of 95 to 98 degrees.

Holt in his diseases of children says it is common in wasting diseases to find sub-normal temperature, and premature infants may register 95 or 96 degrees and one recovery is recorded with a temperature as low as 93.

So far as I have been able to find references to sub-normal temperature, it has been a sudden decrease and a gradual and usually slow return to normal. I find no references to such a condition as exists in my patient, and while he is apparently doing well, I prefer bringing about a change in this condition. I cannot say I have a theory for the condition presented. We know that the production of heat in the body and the physiology of the heat regulation are subjects not yet satisfactorily solved. It is probable (Hand Book Med. Sci., article Calorimetry) that the vaso motor regulations in the medulla oblongata control in some unknown way the relation of heat loss to heat production. A stoppage of heat loss produces a rise in temperature and

it should follow that a lessened production of heat in the body without a corresponding decrease in the loss brings about a fall in the temperature.

Uncinariasis As Seen in Eastern North Carolina.*

By J. L. Nicholson, M. D., Richland, N. C.

Less than two years ago it was claimed from evidence then known that uncinariasis was within all probability a disease of rare occurrence in the United States. Recent data, however, have greatly modified this impression, and forcibly bear out the belief of Dr. Wardell Stiles, of the Zoological Department at Washington, that hook-worm disease is widely prevalent in America, especially among the poorer whites of the sand and pine woods districts of the South.

Judging from my own limited experiences covering a period of nine months, I have little hesitation in saying that this disease is inflicting more injury upon the young people of Onslow, Jones and Duplin county in the way of real suffering, delayed and inferior physical development and lowered mental calibre than all other serious chronic ailments combined. Nor is this all. It seems to be responsible for more poverty and want of thrift among our tenant class of white farmers than any other factor in the whole catalogue of human afflictions. By far the greater number of ill-nourished, anaemic, poverty-stricken families in our midst are victims to long years of the ravages of this parasite. Could you behold the sad condition of hundreds of children, even whole families (fathers and mothers included) within my clientelli, resulting evidently from this great yellow plague, you would not hesitate to agree with me. I will venture the assertion that within a radius of 12 miles of my office one or more members of three-fifths of the white families who farm for a livelihood are afflicted with this disease.

It is not my purpose to attempt to write an exhaustive paper. I shall only give you a few facts as they appear from the first 90 cases investigated.

These 90 patients have been found in 39 white families which show a membership of 280 persons, or 32 per cent of infection. In addition to this 71 members, 26% of these families, show such clinical evidence as make them cases of suspected infection.

Age of patients at time of diagnosis:

Youngest 2 years and 4 months; oldest 57 years.

Number under 5 years of age,	8
Number between 5 and 10 years	17
" " 10 " 15 "	22

Number between 15	"	20	"	21
"	"	20	"	9
"	"	25	"	5
"	"	30	"	6
"	"	35	"	0
"	"	40	"	1
"	"	50	"	1

90

Further analysis as seen from clinical history shows an average age at time of infection to be 7 years and 6 months. Youngest patient found at onset of disease was one year and six months, the oldest 18 years. Between the ages of 3 and 10 years 73% became infected. Between the ages of 10 and 15 years 17% became infected. Between the ages of 15 and 18 years 10% became infected. Not one case yet diagnosed whose history of infection did not ante-date adult life.

These data seem to point strongly to the idea that, to us in Eastern N. C., uncinariasis has its beginning in early life. To my mind this is a very significant fact, and points strongly to the chief avenue of infection.

Sex.—Of these 90 cases 53 are males, or 59%, and 37 are females, or 41%.

Soil.—The soil upon which these 39 infected families live is in 24 instances rather compact, dark gray sand closely underlaid with clay. In 6 cases the same character of soil closely underlaid with "quicksand" and in the remaining 9 the soil is of a loose, fine loamy order with clay several feet below the surface. These conditions tend to demonstrate that the statement of Stiles and others that a sandy soil is most conducive to the growth of the parasite is but half the truth. A sandy soil with a subsoil of that nature which prevents the rapid sinking of the soil moisture furnishes an ideal condition for its life outside the human body. For at least two reasons this may be true:

1st. Absence of moisture invariably results in the rapid death of the parasite.

2nd. *Ground-itch* which, according to Bently, is an important factor in the causation of the disease, is much more prevalent where a damp, muddy soil exists than upon a loose, loamy, or coarse sandy soil from which all surplus water rapidly evaporates or easily sinks into lower strata.

Location of the homes of the 90 patients:

In North-western section of Onslow County	-	-	-	43 cases
In Eastern section of Onslow County	-	-	-	5 "
In West section of Onslow County	5	"		
In Southern section of Jones County	24	"		
Lenoir County	-	-	-	1 "
Craven County	-	-	-	1 "

Pender County - - - 1 cases
Duplin County - - - 10 "

This evidence points to its widespread existence in the counties of Eastern N. C.

Almost every country practitioner of the Eastern Carolina sees every year numerous cases of anaemia, and many of them, especially among the young, of the profound type. These are often classed as malarial coechæmia. Hitherto such cases have received a routine treatment with iron, quinine and arsenic with only slight temporary improvement. Now a trial dose of thymol (if you are without a microscope) will make clear the diagnosis and bring positive results to the patient.

Sleep.—With 53 of my patients sleep is excessive, though of restless order, the patient often changing his position in bed and troubled with unpleasant dreams, eight of them having the habit of talking and grunting in their sleep and four of walking in sleep. Five claim to be poor sleepers. Twenty-five sleep fairly well, the greater number of whom are patients of low infection.

Shoes.—At time of onset of the disease, and as a rule for several years later, not one wore shoes through the summer season.

Drinking Water.—In every instance surface wells, varying in depth from 10 to 20 feet, are the source of supply for drinking water. Majority of patients confess to have drunk water from creeks, ditches and other questionable places at different times of their life. We have not been much impressed with the idea that drinking water plays much part in the spread of this contagion.

In the first place, while the parasite is said to have the ability to live for an indefinite period in water, they invariably sink to the bottom, and are therefore not liable to be taken out with the water used for drinking purposes.

2nd. If the statements of my patients can be taken as facts, 73% of them become infected before the age of 10 years had been reached, a circumstance tending to disprove the idea that the careless custom among farm laborers of drinking creek and ditch water may account for their infection.

3rd. The greater number of the infected families under observation are of the tenant class and to my personal knowledge change homes every few years. Such changes, fortunately, are made at close of the year when the frosts of winter have destroyed all soil infection, leaving the *surface well* as the only source of danger to their successors. Investigation thus far has failed to show any spread of the disease to the second family in consequence of the

use of the "supposed" infected drinking water.

Family Disease.—Uncinariasis seems to be particularly a *family* disease, twelve families affording 51 of the 90 cases under consideration. Not only this, but it seems to be a *family* disease in many instances even unto the third and fourth generations.

To illustrate: Old Mrs. C—, aged 75 years. Her life history, as well as her appearance for the last 30 years, point unmistakably to protracted hook-worm disease. Her son C. G. C., aged 49 (case 16), has been my patient for the greater part of his life. Anaemia, hemic murmur, oedema of face, dyspnoea, colicky pains, in abdomen, were his symptoms 30 years ago. At no time since has he been free from one or more of these symptoms. Microscopic investigation proves his infection at this time. His wife, once a fine specimen of health, and six of their seven children are now heavily poisoned, the only one escaping being a one-year-old babe.

Two other sons of old Mrs. C. as I have known them from early life to the present afford typical pictures of the same condition.

Mrs. B., the daughter of old Mrs. C., and now the mother of eleven children, affords no less proof of early life infection. The disease found affecting seven of her children and two grandchildren serves further to illustrate its persistence as a *family* affliction.

Half dozen other families of equally far-reaching infection might be related.

Appetite.—Normal in 15 cases; poor in 13 cases; irregular in 16 cases; ravenous in 35 cases.

Besides the ordinary diet of "hog and hominy," 14 patients eat clay; 5 patients eat parched coffee; 1 patient eats raw rice; 1 patient eats raw starch; 1 patient eats raw meal; 1 patient eats raw flour; 6 chew sticks; 5 chew rags; 1 chews strings; 1 chews oak bark; 6 chew paper; 1 chews lint cotton.

Place of stool deposit: Not 6 per cent. of these patients use a privy. At night "the back yard," some nearby fence corner, the horse lot are the usual selections for quite 90 per cent. of them: and with small children, both day and night, there is no place so universally used as around the corner of some house, in the back yard—not infrequently this is the corner of the dwelling house itself. To this filthy and revolting practice may be attributed in large measure the widespread existence of the malady among such people.

Character of Stools.—Dark brown in 80%; reddish brown in 6%; light brown in 14%; hard in 78%; soft in 22%.

Duration of Attacks.—The clinical history of these cases shows an average of 9 1-6 years of sickness to each patient, or a sum total of 825 years of injured health to one person.

On-Set of the Disease.—In 46 cases it began in spring or summer. In 14 cases in early fall. In 29 no information could be had. During spring and summer decline in health seems to be the invariable rule. As cold weather approaches slow improvement sets in and continues through the winter.

Degree of Infection.—Forty cases of very heavy and serious infection have been recorded. From this class 450 to some more than 1000 worms have been expelled under treatment. Twenty-four cases of moderate infection with symptoms of less gravity have been treated and surrendered from 75 to 150 parasites. 26 cases of low order of infection showed the presence of from 2 to 50 worms. I would not be understood as claiming that the clinical picture presented in each case can be taken as an index to the number of worms infesting the patient's intestine, for the duration of disease has an important bearing as well upon the patient's condition.

In many cases of several years standing in the early part of life the lack of physical development is very striking. Later in life as the degree of infection decreases, or recovery is complete, much of this systemic deficiency seems to be overcome.

A few cases will illustrate the first proposition:

E. C. H., aged 16 (case 13), infected 10 years. Weight, 75.

J. T., aged 21 (case 37), infected 15 years. Weight, 84.

J. G., aged 19 (case 66), infected since childhood. Weight, 84.

C. T., aged 17 (case 39), infected since childhood. Weight 61.

Other diseases found present during the course of uncinariasis, which in some instances are its symptoms, viz:

Occasional attacks of abdominal colic, varying much in severity, present in 64 cases.

Occasional attacks of diarrhoea present in 39 cases.

Occasional attacks of fevers present in 21 cases.

Occasional attacks of headache present in 18 cases.

Occasional attacks of acid stomach present in 10 cases.

Chronic ulcer of the leg present in 4 cases.

Rheumatism present in 3 cases.

Cramps in lower limbs present in 5 cases.

Asthma present in 1 case.

Mad itch present in 1 case.

Epilepsy present in 2 cases.

Recurrent appendicitis present in 1 case.

The complication of two cases of epilepsy and one case of appendicitis with uncinariasis is interesting and deserves further observation. The large number of attacks of slight recurrent fever is very suggestive of cause and effect. Several patients positively date the beginning of their present condition from an attack of fever of several days duration.

Ground Itch.—Eighty-nine patients give history of from one to a dozen attacks of ground itch. In 62 patients the attacks were very severe. With 69 the first attack of ground itch is said to have preceded the symptoms of hook-worm infection. Five of these became affected in summer of 1903, and very positively date the beginning of their pallor, oedema and dyspnoea from a protracted attack of ground itch.

N. J., aged 2 years 4 months (case 85), gives no history of ground itch in usual form. In July, 1903, when but 17 months old, was permitted to sit upon damp ground where several children known to be hook-worm cases often played. An attack of "mad itch" upon buttocks and legs resulted. By the late summer the child gave every evidence of hook-worm infection.

I feel no hesitation in expressing the belief that ground-itch is the one great causative agent in the spread of this plague,

Looss claims to have proven that the larvae may find entrance to the body through the epidermis. Bently, experimenting on this line, strongly insists that ground itch is but the invasion of the parasite into or under the skin. Dr. Smith, of Atlanta, who has had much experience with the disease, claims to have found "that every person examined who has had an attack of ground itch within a period of 7 or 8 years has the uncinaria in his intestines."

As further evidence of the accuracy of the ground itch theory, we have found

1st. Uncinariasis has its beginning generally in very early life.

2nd. The soil upon which the greater number of my patients live is especially suited to the propagation of ground itch.

3rd. Eighty-nine of my patients have suffered repeated attacks of the malady.

4th. The period of beginning improvement in uncinariasis in all my adult patients closely corresponds to the time when they no longer went without shoes in summer.

Temperature.—In 41 patients, ranging in age from 3 to 20 years, and being infected probably from few months to several

years, the temperature varied from 98.3-5 to 100.4 degrees, making average temperature of 99.4 degrees F. In 6 other young patients who were found heavily infected with both the hook-worm and the round worm, the body heat was slightly sub-normal in each case, making an average temperature of only 98. These observations are interesting and were not carelessly made. In many cases repeated tests with different thermometers were made and the above statements were verified.

In 8 patients whose ages ranged from 25 to 50, and whose infection was of long standing but low in intensity, the average temperature was found to be 98 F. I know that it is a matter of common observation that body heat is slightly above the normal in cases of anaemia, whatever its causes may be. But why this extra temperature of one degree in 41 cases with uncinariasis, while 6 cases of similar infection and intensity and age show a range of temperature averaging $1\frac{1}{2}$ degrees less, even $\frac{1}{2}$ degree below normal when round worms are present?

Another observation of much interest: 16 cases give evidence of repeated outbursts of fever. In some cases this phenomenon occurs at irregular intervals. In others, at regular periods, preceded by chills through the whole winter. No plan of treatment for malaria has been effective. Are these attacks of malarial origin? I have made no microscopic tests to determine the matter. Those of them who have parted with few hundred uncinaria with no malarial treatment accompanying the process, assure me these fever attacks have ceased. Four other cases of recent origin and of heavy infection very positively date their pallor, oedema and dyspnoea from a long attack of fever.

Blood.—The few blood examinations that I have made show deficient haemoglobin to be an important change in cases of severe gravity. The diminution of red blood corpuscles in serious cases is very striking.

A. T., (case 39), age 13, Hb. 16%, R-Blood C. 1,670,000.

J. T., (case 66), age 19, Hb. 10%, R-Blood C. 1,110,000.

M. K., (case 39), age 16, Hb. 15% R-Blood C. 1,400,000.

M. J., age 19, Hb. 10%.

Spleen and Liver.—In quite 40 per cent. of my cases the examinations of the *spleen* and *liver* gave negative results. In one instance the spleen was enormously enlarged. In only 4 others slightly so. In 8 case only was the liver found slightly enlarged and tender.

Urine.—As far as tested gives nothing but negative results.

Circulatory System.—The symptoms generally present are those seen in all cases of anaemia. Cervical pulsations, haemic murmur, irregular action of the heart with palpitation in some, and in a few others a prolonged and accentuated first sound.

Oedema.—I know of no symptom so universally common, certainly among the young, as *oedema of the face*. A bloat beginning well up on each side of the nose and extending in fan shape outward across the center of the face is a condition invariably present, so far as my observations go.

Finding this middle face oedema, together with a facial pallor, and a history of occasional attacks of abdominal pain (let these symptoms be ever so slight) I have not in a single instance failed to find a case of uncinariasis. This statement refers especially to patients less than 20 years of age.

With patients of 30 years and more who have carried the parasite for a long time and show now only low infection, the facial expression is altogether different. In these we may have not only the entire absence of oedema, but quite to the contrary we find a thin, emaciated and unduly furrowed condition of the lower half of the face—a face which would indicate that your patient is several years older than the age he gives you. From the slightest bloat of the face to the most prominent and distressing anasarca will vary in different patients or in different degrees of infection in the same patient.

Respiration.—One of the most common symptoms present is dyspnoea, especially prominent during exercise or sudden exertion. In a good many of my cases this symptom was so distressing as to entirely prevent all except the slowest and most limited locomotion, such patients being unable to walk faster or further than a child just beginning to take his first steps in life.

Diagnosis.—While these symptoms will lead one to a correct conclusion as a rule, *microscopic* examination of the feces is the proper way of making a *certain diagnosis*. The ova found in great numbers in a fresh specimen of feces are characteristic and can leave no doubt as to diagnosis. Through the kindness of my friend, Dr. W. S. Rankin, of Wake Forest College, the great majority of my cases were investigated microscopically before treatment was begun. In good many of my most urgent cases, with rational symptoms strongly characteristic and prominent, I have made diagnosis with trial dose of thymol, in every case but two getting scores of parasites. These two cases were

quite misleading from the fact of pregnancy existing in both instances, which doubtless produced the symptoms which I mistook for those of uncinariasis.

Treatment.—The disease, certainly in its early history, is curable if treated properly. As an anthelmintic to cause the expulsion of the parasite, thymol has almost entirely displaced all other remedies. The most common method in its administration with me has been that laid down by *Sandwith*. The patient is given a purgative the day before, at the same time placed on a liquid diet for supper and breakfast following the purgative and preceding the thymol. To an adult 30 grs. of thymol in capsule are administered at an early hour of the second day and followed by a similar dose two hours later, this to be followed in two hours by a full dose of epsom salts. To my mind the treatment of *fasting* and *thorough* purgation on first day is a point of the highest importance. In 6 cases in one family this part of the treatment was overlooked or purposely neglected by the father, and the results in every case after four weeks thymol treatment were of but little benefit. Microscopic tests made two weeks after the fourth treatment thus partially carried out showed that my patients were still heavily infected. Another four weeks treatment with the proper observance of the direction to purge and use nothing but liquid diet for three meals resulted in the expulsion of more than 2500 hook-worms and a steady and marked improvement in the six patients. Dr. Rankin's experience in the treatment of some 28 or 30 cases of mild infection is in thorough harmony with my experience. In a recent letter to me he lays special stress upon the necessity of preliminary purgation and fasting. The more thoroughly the bowels are cleared of all fecal matter in the beginning, the more effective will be the work of the anthelmintic. While the fact that thymol is poisonous must not be lost sight of, still the greater the quantity your patient can tolerate at once the more effective will be your treatment. The nearer to a saturation of the liquid contents of bowels with the remedy, the more certain will be your chance of curing your patient in a short time.

I am in the habit of beginning treatment with 60 grs. thymol divided in two doses for an adult. Even 80 grains have been given in few instance and with no untoward effect. A slight giddy, drunken feeling with some disposition to stagger in walking and occasionally little nausea are effects frequently complained of. All of these pass off. Directions to hasten the administration of salts in case such symptoms

are much aggravated are always enjoined. This rapidly dissipates these unpleasant symptoms.

In two children, aged 10 and 12 years respectively, one 10 gr. capsule of thymol was ordered to be taken hourly for three doses. Unmindful of directions, the dosage was continued until 50 grs. had been administered in 5 hours. The effect in both cases was an alarming collapse. After hurried bowel action by the use of anaema and salts consciousness was regained and soon the little patients were entirely themselves, less "a teaspoonful of hook-worms" (to use the parents statement). The dosage laid down by Sandwith has proven thus far with me entirely safe. Malefern, acetozone, sulphur, santomie, &c., have been tried in few instances, giving almost negative results.

Prevention.—The question of prevention is one of the highest importance. Every precaution should be taken to prevent the contraction of ground itch. To this end, shoes must be worn during the damp weather of summer; the premises must be properly drained; cleanly habits must be inculcated, e. g., handwashing before taking food; stop the use of "back yard" as privy. Special care must be taken to keep pure the water supply and to dispose of all human excreta either by disinfection or by frequent burial.

Uncinariasis in North Carolina, Its Frequency and Etiology. *

By W. S. Rankin, M. D., Wake Forest College.
N. C., Department of Pathology.

Mr. President and Gentlemen of the North Carolina Medical Association:

The limited time at my disposal makes it necessary for me to leave unread a large portion of my paper. In choosing what I most desired to bring before you, I decided to read only that part of the paper that relates to frequency and etiology. I have done this because, if there is anything original in the paper, it may be included in one or the other of the above sub-divisions of the subject, while the rest of the paper is simply a resume of the previous literature.

Frequency.—You will agree with me when I say that the *importance* of uncinariasis will depend upon two facts; first, its frequency, and second its pathological significance. One aim and one claim of this article is to establish the first fact, viz: its frequency.

In June, 1903, while Resident Pathologist to the University of Maryland Hospital, a case was sent up from the dispensary with

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

a diagnosis of malaria. The resident in charge of the ward failed to confirm the diagnosis with a blood examination, although clinically the diagnosis would not have been questioned. A widow was negative. At this juncture the case was becoming interesting from a diagnostic point of view. I made a differential leucocyte count and found an eosinophilia of 11 per cent. In the absence of skin eruption and asthmatic trouble, of course the stool examination was clearly indicated. This was done by Dr. Wm. T. Mesarck and myself, with an easy diagnosis of uncinariasis, a diagnosis, which Dr. Stiles kindly confirmed for us.

Having become interested in the disease, I collected most of the English literature on the subject. On reading this, I was impressed, first with recent discovery of a disease, which the evidence at hand proved had been so long present with us; second, the unanimous claim by investigators that it was one of the *most* prevalent of all the diseases of the South, and thirdly, the contradiction of this claim as manifested by the small number of cases reported and the scanty literature.

The question then, assuming two sides, at once became inviting to investigation. Hear some of the evidence in favor of its importance:

Dr. Stiles says: "There is, in fact, not the slightest room for doubt that uncinariasis is one of the most important diseases of this part of the South. * * * In frequency it belongs in the general class with tuberculosis, malaria, and gonorrhoea." He was writing from South Carolina.

Dr. H. F. Harris, of Atlanta, says: "The most common of the severe diseases of the South."

Dr. Bailey N. Ashford, Ass't Surgeon United States Army in Porto Rico, writes: "The disease is the most destructive and general disease of Porto Rico."

Now add to this the unqualified endorsement of every single investigator, and you have one side of the question. And mind you, this evidence comes from the investigator, the advance guard of our medical army. Now, on the other hand, we have the recognition of the first case in America in 1893, only seven cases to January, 1900, reported, only fifty-one cases could be collected from literature of this country in January, 1903, by Dr. Capps, of Chicago, and now there has been reported, all told, between one hundred and fifty and a hundred and seventy-five cases. These claims and this small number of cases stand directly opposed to one another. An adjustment is needed.

In July, 1903, I located in Jacksonville, Onslow county, North Carolina, and my

observations there and conversation on this subject with Drs. Cox and Nicholson, of this county, at once reawakened interest in this disease, and abundantly confirmed the observations of Stiles, Harris, Ashford, and others.

Being convinced through conversation and correspondence with other doctors that the importance of the disease was not properly appreciated, I at once decided to collect such evidence as I could to prove its frequency. This work was much facilitated when I was called to the chair of pathology at Wake Forest College in September, 1903.

In order to study the frequency, I made the following proposition to the State Board of Health: To travel certain counties, scattered in different sections of the State, to see every doctor in the county, and to examine all suspected stools, which he had collected, provided the Board of Health pay my expenses. I offered one month's time and to furnish my own microscope and other apparatus. This offer was accepted. Dr. Lewis at once had issued a number of letters, acquainting the doctors with our aims, and asking them to collect specimens. This letter, with a personal letter stating the time of my arrival at the doctor's office, I mailed to the doctors I intended to visit, about ten days before I reached their office.

A weeks' canvass through Northampton and Edgecombe counties in the latter part of December proved very discouraging. In the whole weeks work only four cases were found. Many doctors had not collected a single specimen, and none had more than two specimens.

Reaching Wake Forest, I decided upon another plan of investigation, viz: to examine stools of students from various counties. This last plan of work was surprisingly successful in furnishing evidence as to the frequency, and also distribution of hookworm disease.

By these two methods of investigation, I have succeeded in collecting 147 cases of uncinariasis, about as many as the total number up to this time reported in American literature. In order that you may have a standard of comparison let us see something of its prevalence in other countries.

Since Dubini discovered the parasite causing the disease in 1843, it has been found so widely distributed that it is very probable that the disease is endemic the world over between the parallels 51 and 31 deg. North and 30 deg. South.

In Egypt it is found in nearly every cadaver. So frequent is it here, that the disease is called Egyptian chlorosis.

In India, Manson states that in certain sections 75 per cent. are infected.

In Madras 52 per cent. are infected.

In Kiolo, Japan, 13 per cent. are infected.

In Java, Ceylon, the Straits Settlement, and on this continent in Brazil and Guinea it seems equally prevalent. In Porto Rico last year one-fourth the death rate was due to an anemia produced by this parasite. Out of 25,552 deaths, 5,678 were due to anemia. The government of the Island has recently appropriated \$5,000 to the study of this plague.

Now let us look at its frequency and distribution in the United States.

The first case was recognized by Blickhahn in 1893, in St. Louis.

But the interest of the profession was not aroused until Stiles brought the results of his painstaking investigation to their attention in 1902.

Of course it has not yet been sufficiently studied to allow more than approximate conclusion, but we can say now that *the more the disease is studied the greater does this frequency appear.*

The writer on this affection in Allbutt's System of Medicine correctly states that, "To diagnose the disease you only have to suspect its presence."

But now let us see its distribution in the United States.

New York: Nine cases reported, all of which were probably imported. Seven surely imported.

Pennsylvania: Three cases, all of which were imported.

Maryland: Four cases, all imported.

South Carolina: Stiles, on his tour of investigation, reports sixty or seventy cases.

Virginia: Three cases, all American type.

Georgia: Harris reports thirteen cases, and Claude A. Smith has seen so many cases that he has ceased to record them. Besides these Stiles found the disease very prevalent here.

Florida: Dr. Stiles states that Florida does not differ from Georgia in point of prevalence.

Alabama: Dr. Bondurant reports fifty cases, and Dr. Harrison three cases.

Louisiana: One case reported.

Texas: Dr. Allen J. Smith in examining stools of eighty-six medical students found eight infected. Three other cases are recorded from this State.

California: Fifteen cases. All imported from Mexico and P. I.

Missouri: Two cases, one of which was imported.

Indiana: Three cases, one American type.

North Carolina: When I began this investigation there were reported from this State only the two cases seen by Dr. Stiles

on his Southern tour of investigation in 1902. To-day I report 147 cases—more than nearly all the States combined have on record. These cases were found by one or the other plans of investigation. The work among the students is most interesting and valuable for its bearing on the distribution of the disease in our State. The results among these students are truly surprising, almost beyond my conception. In about 140 examinations 53 cases were found or 37% of those examined. I will here state that the students were not "picked cases," only eastern counties were usually chosen. When a county was chosen every student from that county was examined. Here are results according to counties. Some counties show every student infected.

Sampson county, six men in college, all infected, 100%.

Pender county, three men in college, all infected, 100%.

Iredell county, four men in college, all infected, 100%.

Columbus county, two men in college, all infected, 100%.

Cumberland county, one man in college, is infected, 100%.

Chowan county, one man in college, is infected, 100%.

Pasquotand county, one man in college, is infected, 100%.

Washington county, one man in college, is infected, 100%.

Wilks county, one man in college, is infected, 100%.

Perquimans county, one man in college, is infected, 100%.

Northampton county, one man in Wake Forest, is infected, 100%.

Bladen county, one man in college, is infected, 100%.

Martin county, one man in college, is infected, 100%.

Hertford county, sixteen men in college, 14 examined, 10 infected, 71%.

Bertie county, four men examined, two infected.

Onslow county, two men in college, one infected.

Burke county, three men examined, and two were infected.

Henderson county, two men examined and one inspected.

New Hanover, only one man examined from this county; he was infected.

Halifax county, two men were examined and one was infected.

Robeson county, five men were examined and three were infected.

South Carolina: Furnished six of above fifty-three cases.

Florence county, six men in school, four examined, all four infected. Two would

not submit, but clinically were typical cases.

Then one case came from Marion county, and the sixth case from same county that I failed to get.

One of above 53 cases came from Sevier county, Tenn., a very mountainous county.

Now, gentlemen, these are facts, and their interpretation speaks for itself. There is only one conclusion left you.

Its occurrence in Iredell, Burke, Wilkes, and Sevier counties (this last in Tenn.) shows that the clay districts are not immune, by any means. According to my observations the cases are not as frequent and not as severe as they are in Eastern Carolina.

Add to these 53 cases, 71 cases diagnosed for Dr. Nicholson, of Richlands, Onslow county.

Six cases for Dr. Harrell, of Tarboro.

Four cases for Dr. Hicks, of Dunn.

Four cases for Dr. Cox, of Jacksonville, Onslow county.

One case for Dr. H. W. Lewis, of Jackson.

One case for Dr. R. H. Speight, of Wrendale, Edgecombe county, and seven cases which Prof. Stevens, of the A. & M. College collected for me from the State penitentiary, and we have a total of 147 cases diagnosed microscopically in North Carolina since September, 1903.

From these 147 cases, I have collected etiological data bearing on 128 cases, on which data I wish to base some conclusions regarding etiology of the disease.

Now I will state here for the sake of those who question the correctness of above diagnosis, that the diagnosis of uncinariasis microscopically is considered by all competent microscopists as one of the easiest diagnosis. If proof is desired I will state that not in a single one of the above cases did the thymol treatment fail to confirm diagnosis by expulsion of worms. I know of at least 70 cases so treated.

Etiology: This part of our subject naturally divides itself into two parts: First, a study of the anatomical and biological character of the parasite, and second, its mode of entrance into the system. The first part, I shall not touch upon here, on account of limited time. To those interested in this part of the subject I would advise to read Bulletin No. 10, on "The Distribution of Hookworm Disease in the United States" by Dr. Charles Wardell Stiles, of the Bureau of Animal Industry; also see Dr. Allen J. Smith's article in the November, 1903, issue of The Journal of American Medical Science.

The second part of our etiology, viz: its mode of entrance into the system, is not near as well understood as its anatomical

and biological characteristics. And this is the most important part of the etiology, for upon an understanding of the mode of infection will depend the rational and effective application of the preventive treatment upon which will depend the extermination of the disease.

In the outset we may consider three modes of infection possible:

1st. Taking of food contaminated with fecal matter, i. e., dirt-eating.

2d. Through the drinking water.

3d. Through the skin in the lesions of ground-itch.

Now let us study these portals of entry a little more in detail.

The first dirt eating we can readily understand. It is the simplest mode of infection. Dr. Stiles seems to consider it the principle mode of infection.

So much importance is attached to this view that the disease is known as dirt-eaters anemia, brick-makers anemia, tunnel anemia, miners anemia, etc., all occupations associated with soiled hands, and of course a certain amount of dirt-eating. Then we must not forget that dirt may get into the mouth on fresh uncooked vegetables, such as celery, radishes, water cress, etc. Here, too, it is well to remember Allen J. Smith's caution that some dirt-eaters are not in any way exposed to infection with uncinaria. For some dirt, as ashes, soot, mortar, etc., could not possibly harbor larvæ.

Again let us not forget that dirt-eating is often an effect and not a cause of the disease. This is a well recognized association of anemia. *Second mode of infection, viz., through drinking water*, demands more detailed consideration. As Dr. Stiles has pointed out, and I have frequently verified the eggs rapidly degenerate when they sink in water. So that if a stool, immediately after voiding, was washed into water the eggs would rapidly perish.

Not so if the stool lies on the ground two or three days until the eggs hatch out onto the young embryo, which is the infective stage. Now a rain comes and carries the young worms into a nearby spring, stream, or surface well. Loose has shown that these young worms pass rapidly through sand filters and furthermore, that they will live at least thirty days in water. These larvæ in the well sink to the bottom, but the bucket also sinks and could bring up the young worms as easily as it does the grains of sand found in nearly every bucket of water. Dr. Smith seems to think that possibly the winds play a part in spreading the dry feces, in the form of dirt on the house-tops, where the eggs can be washed down into a cistern, and there develop. But experiment proves that these eggs and larvæ die rapidly

on drying. So until it is proved that the eggs can withstand drying, the wind can be disregarded as a factor in spreading the disease.

Third mode of infection, viz., through the lesions of ground-itch. I have purposely left this till the last, because I want to go more into detail, as I believe it is the principal portal of infection in Eastern Carolina. What relation does ground-itch bear to uncinariasis? That is an important question. Now in considering this phase of our subject, the first question to present itself is this: Is ground-itch infectious? Here is the evidence derived from the articles of Elliott, of Assai, India, who gives clinical evidence, of Dalgetty, of S. Sylhet, India, who gives both clinical and experimental, and lastly from Bently of South Africa, who furnishes experimental evidence, and all this evidence answers the above question in the affirmative.

Let Elliott testify first: In the *Journal of Tropical Medicine* for December, 1900, he reports the clinical picture of ground-itch, and in considering the cause arrived at the following conclusions:

(a) The disease manifest itself from May to September, the largest number of cases occurring in August, July and September.

(b) They are most numerous after heavy rains when the ground is moistened and sticky.

(c) They occur in only those who go barefooted and expose themselves to the wet earth.

(d) It does not occur at all or only to a slight extent on new land.

(e) Cases are most frequent and severe in those who work about the lines, where the ground is thoroughly manured. The frequency and the severity of the cases being proportionate to the fecal material contained in the soil.

Now, in order that you may properly appreciate these observations, it will be necessary for you to recall the important points in the biology of this parasite. You will remember that auto infection cannot occur, that for every worm in the intestinal canal, a young worm, not an egg, must enter the system.

The eggs never hatch in the intestine. In the fresh stools they are unsegmented or in the very early stages of segmentation. These eggs then are contained in human feces. After being deposited, if the temperature is kept between 21 and 37 deg. C., if the stool is kept moistened, not allowed to dry, and exposed to the air it hatches out in 24 to 48 hours into the first stage which can live well in water; in fact, requires much water. This last stage reaches in

about four to seven days its second stage, which is the infective stage.

Now returning to Elliott's observations, let us see what they tell us.

We see to produce ground-itch we must have contact of the bare skin with fecal contaminated soil, at a certain temperature and containing a certain amount of moisture. All of these five factors must be present, i. e., bare-skin, soil, feces, moisture and a certain temperature. No one, two, three, or four of these conditions will produce ground-itch. Ground without moisture will not cause it, or it would occur in the warm months of April and May, when there is feces, bare-skin, sandy soil, and warm temperature, all present. Moisture without temperature of about 27 deg. C., doesn't cause or they would have it in the winter. Ground with required temperature and moisture doesn't cause, or it would not be so scarce on new lands. It is not air or the Europeans who breathe the same air as the barefooted native, would have it. They don't bring their bare skin in contact with the ground. We have here a mass of circumstantial evidence that would indicate, first, that ground-itch is infectious, and second that the infection seems to be derived from human feces. Then assuming infection, what is the infectious agent?

Do you notice any conformity of above conditions, i. e., presence of feces, certain temperature, moisture, etc., to the biological requirements of the hookworm larvæ, You certainly do. Is it possible that these parasites produce ground-itch? Allow Bently to answer that question. Having had his attention attracted to this possibility by finding a short rhabditiform embryo in the lesions of ground-itch, he performed the following experiments: He took two stools, one we will call A., which was infected with the larval uncinaria. A second stool we will call B., which was free from uncinaria. He then sterilized a mass of sand. Dividing this, he mixed part with stool A. and part with stool B. Now A. was divided into two portions which we will call a and a. B. was also divided into b and b. Now he exposed both a and b to the air for eight hours, till they were dry. Now all four portions were moistened and applied to the skin. A produced an erythema exactly resembling ground-itch, and only a few dead larvæ remained in the mass a. In a which contained many larvæ killed by drying there were still all the original larvæ.

Now Dalgetty exactly agrees with Elliott on the predisposing canals, viz: bare-skin, moisture, temperature, etc., but differs with Bently as to the direct cause. Dalgetty's work preceded Bently's two years. Dalgetty attributes ground-itch to the rhizog-

lyphus parasiticus, a parasite closely resembling the itch mite. Its association with fecal material, he explains on the ground that this parasite lives best on rich organic matter.

I am not inclined to accept Dalgetty's theory as to the direct cause. These are my objections.

1st. From his paper his technique would appear faulty.

2d. He does not give per cent. of cases in which this parasite was present, an omission that he would not have made, had the parasite been found in very many of his cases.

3d. He fails to explain the association of ground-itch with fecal contaminated soil.

Now from this evidence I believe we are justified in looking upon ground-itch as an infectious dermatitis, due to the entrance of the larval uncinaria into the skin, carrying with them certain bacteria which modify the lesion. Now if ground-itch is infectious, and we believe the infectious agent is the larval uncinaria, we may very properly ask, does the skin infection bear any relation to the intestinal infection?

For an answer I refer you to Loose's experiment. Loose is a most careful investigator. His work is accepted by all authorities. These experiments were done as early as 1898. He examined the feces of two puppies and definitely assured himself that they were free from hookworms. He then shaved their backs and applied a poultice composed of charcoal and feces infected with larval uncinaria to the bare skin. Both puppies died on the ninth night after the poultice was applied. The autopsy showed many young hookworms in their intestines, which corresponded in stage of development to young worms found in another dog's intestine, which dog had been fed on the same stool that was applied to the puppies back. Then Loose did the same experiment on a man. His stools were examined and found free from hookworm eggs. A poultice containing uncinaria infected feces was then applied to the back of the man's forearm. On the 71st day thereafter, the man's stools contained the eggs of uncinaria. Now this proof that uncinaria may enter through the skin is accepted. It is not without analogy. The weight of evidence goes to prove that this occurs in infection with Bilharzia hematobia, where the parasites are found in the bladder, ureter, and kidney.

But you say, having entered, why should they locate in the intestine? We don't know how, we know they do. The selective affinity of various parasites for different tissues, is a well recognized fact, and is accepted by all authorities. We have ex-

amples of this selection in infection of the brain with *cœmirus*, infection of the liver with *echinococcus* or *ameba*, infection of the muscles with *trichinæ spiralis*, and lastly infection of the intestine with *ankylostoma duodenale*. The fact stands and some day the explanation will appear.

Now assuming that you accept the great frequency and the pathological significance of this monstrous evil, I think you will agree with me, in claiming that the preventative treatment is most important, for upon this will depend the extermination of the hookworm. Now to effectually apply this prevention, we must understand the mode of infection. Of course the above three routes of infection, viz: dirt-eating, drinking water, and ground-itch, I think we can safely accept all as possibilities, and in applying the "source of prevention" all should be duly considered.

But which is the most important? Which is the most accessible portal to the hookworm? To answer that question I have collected data bearing on 118 cases, distributed as follows: 71 cases from Dr. Nicholson's practice; three from the practice of Dr. Cox of Jacksonville, Onslow county; four cases from the practice of Dr. Hicks, Dunn, Harnett county; four cases from the practice of Dr. Harrell, of Tarboro, Edgecombe county; and 35 Wake Forest students.

Here is some of the evidence furnished by these cases.

Race: All the cases were white. Some have claimed that the disease was just as frequent in the negro, but not so apparent on account of the difficulty in recognizing anemic conditions in this race. However, Dr. Nicholson has made some important observations right here. He went to considerable trouble to find it in the negro. He only found a notable absence of symptoms (other than pallor) in this race. In only one case was the suspicion strong enough to justify stool examination. In this case microscopically the stools were negative, and likewise the results of thymol. This is a very interesting point for investigation. The evidence at hand clearly points to a relative immunity in the negro. I will further state that ground-itch is common in the negro.

Sex: Of course the students were all males, and in considering the influence of sex should be ruled out. Of other 82 cases 47 were male and 35 female.

Residence: Of the 118 cases, 109 lived in the country and nine in town. But this included 71 cases from Dr. Nicholson's practice, all of which were from the country. It is not right to consider the bearing on residence of the 71 cases. We get a better idea concerning the influence of residence if we

take the 35 students. All of these 35 students were from the country, except seven. These seven lived in mere villages, except in one or two cases, and every one had lived in the country at some period of their lives.

Soil: The soil is usually a compact layer of fine gray sand containing much organic matter, with a sub-strata of stiff clay twelve or eighteen inches beneath the surface. This clay sub-soil serves to hold the moisture necessary for the development of the parasite. In those sections where there is 5 to 12 foot of coarse sand there is a notable absence of ground-itch and hookworm disease. Dr. Nicholson's practice is distributed over sections of country made up of the above two soils, and he has been impressed with the rarity of the disease in the latter kind of soil.

Occupation: Of the 118 cases, 117 farmed and one worked in a cotton mill.

Family Disease: Of 90 cases occurring in Dr. Nicholson's practice, 39 families were represented. The total membership of these 39 families was 280. This gives 32% of the family infected, as shown by the microscope while at least 26% more show clinical evidence of the disease.

Age: The students ranged from 17 to 30 years; 12 were under 20, and 18 between 20 and 25, making 30 of the 36 cases under 25 years of age. Taking the 82 mixed cases the ages were as follows:

Youngest $3\frac{1}{2}$ years old.

Oldest 56 years old.

Two were 50 years old.

Under five years there were five cases.

Between 5th and 10th year 14 cases.

Between 10th and 15th year 28 cases.

Between 15th and 20th year 15 cases.

Between 20th and 25th year 9 cases.

Between 25th and 30th year 2 cases.

Between 30th and 35th year 4 cases.

Between 35th and 40th year 1 case.

Between 40th and 45th year no case.

Between 45th and 50th year 3 cases.

Between 50th and 55th year no case.

Between 55th and 60th year 1 case.

Dirt-eating: Of the 36 students 31 denied dirt-eating, three admitted dirt-eating, and two chewed parched coffee. Of the 82 mixed cases 64 denied dirt-eating, eight confessed dirt-eating, five chewed rosin, two chewed rags, two chewed sticks, and two chewed coffee.

Drinking Water: All of my eastern cases drank from shallow surface wells varying in depth from 6 to 25 feet. Many of these wells were uncovered and uncured. My mountain cases all drank from springs. As is the custom on farms, both the western and eastern cases drank from creeks occasionally when at work in the field.

Notwithstanding this questionable water

supply in every case, and Loose's demonstrations that the larvæ pass rapidly through sand filters and live well in water, we do not believe that drinking water is an etiological factor of much importance. Of course it is a possible route of infection.

We do not believe water an important etiological factor; first, because the disease begins in the average case at $7\frac{1}{2}$ years, in our cases 73% coming on before the 10th year. Now this is before the child begins to run about or work on the farm. If it came from drinking from springs, creeks, or branches, you would expect it more frequently after the fifteenth year, and more frequently in males. If it were from the "house well" then the disease should not be so markedly confined to early life, and the adult would be more often victim, because he drinks more water than the child. Second, it occurs usually among the tenant class, who move from one farm to another every year or so. They move in the winter, and the frost and snow sterilizes the old home for the new occupant in the spring. Now, if the infection comes from the well, which the frost and snow would not sterilize, the new family should fall victims to the disease of their predecessors. Dr. Nicholson, with the 39 families under his care, has carefully observed this point, and no such infection of the new family takes place, unless their habits are uncleanly.

Ground-itch: Every single case in the 118 cases, except one, gave a history of ground-itch, and this exception was one of my students from Iredell county, who said he didn't know what ground-itch was. Admitted that he had suffered with dew-crack.

Now from above evidence, and certain important points to be noted further on, we claim that the great mass of evidence favors ground-itch as the most important factor in the transmission of hookworm disease, and that while drinking water and dirt-eating are possible sources of infection, they are nothing like so important as ground-itch.

What are the grounds for such a claim?

(1) Nearly every case of uncinariasis gives a history of ground-itch. If we accept Bently's theory of ground-itch, i. e., due to entrance of hookworm larvæ, carrying in with them certain bacteria, which latter cause the ground-itch, we can explain the cases without history of ground-itch, as due to the entrance of larvæ with only very few bacteria or non-virulent bacteria, not sufficiently numerous or virulent enough to cause the itch. Or probably a better explanation would be that these cases were infected through drinking water or dirt-eating, as soiled hands.

(2) It has been noted that in localities where ground-itch is frequent there uncin-

ariasis is frequent, and where there is no ground-itch little or no hookworm disease.

(3) The age shows that hookworm disease occurs when the children are going barefooted. You will notice from the *age table* that it does not occur in babies under three years, for they do not run about on the wet ground.

Also notice that the disease increases from the 5th to the 15th year and then declines. At this age all children go barefooted and they are most active then. See age table.

Cases are uncommon, comparatively, beyond the 25th year, rare beyond 35th, and when they do occur are light, and usually on the decline. Among the students the decrease was light and was declining, because the men had ceased to go barefooted.

Here is a most interesting point. Of 30 students treated with thymol, the average number of worms expelled was 20. These men give history of going barefooted till 12th to 14th year.

Now there were six men from Sampson county. A peculiarity of these fellows is to go barefooted till 17 to 20 years of age. The average number of worms from these six fellows was 113. One man expelled 350, another 120, another 100, another 68, another 30, and another only 10. And I find the fact suggested here applicable to all cases. My severe cases in men beyond 20 are in those who have gone barefooted much of their time.

(4) The severest cases give a history of severest ground-itch.

(5) Dr. Nicholson has observed families in which the only case of uncinariasis was the only child that had suffered with ground-itch. Mind you, this child drank the same water, and eat the same amount of dirt as its brothers and sisters.

(6) We have at least five cases, of what may be termed acute uncinariasis. These cases present the following history: Perfect health, then a sudden primary attack of ground-itch, which incapacitates the individual. Developing within three to six weeks, a profound anemic bloated condition comes on, in every way resembling the picture of chronic parenchymatous nephritis on inspection. Thymol given after finding eggs, and the condition is completely cured. So striking and convincing of ground-itch as an etiological factor, are these cases, that I would like to report them, if space were at my disposal.

(7) Where patient ceases to be troubled with ground-itch, improvement usually begins,

(8) Allow me to offer my last bit of evidence in favor of ground-itch as a cause, and at the same time report the youngest case on record, and I will close.

N. J., 2 years and 4 months old, when diagnosis was made microscopically. Lives in a log cabin on a *dirt floor*. Associated with mother and five other children who have uncinariasis. When this child was 17 months old, in the summer of 1903, the mother was obliged to leave this child on this dirt floor, while she and the other children assisted a neighbor to "hang tobacco." The child very soon developed an attack of "mad itch" over buttocks and lower limbs. Till now the child was red-faced and happy. After this "mad itch" its health rapidly declined, and among all our cases, we have seen no more distressing or aggravated case.

Now, gentlemen, let me ask this question: If dirt-eating and bad water supply are responsible for the majority of cases, as Drs. Smith and Stiles would seem to favor, why does it occur so rarely under three years of age? For who eats more dirt than the baby, or what organ is more susceptible to infection with parasites than babies' intestines, which harbors nearly all other intestinal worms, but rarely uncinaria? If drinking water is such a factor, why should it be more frequent in children than adults, who drink less water than adults.

We therefore conclude: *That concerning the etiology of hookworm in North Carolina ground-itch is by far the most important portal of infection, and that dirt-eating, and contaminated water supply, while capable of infecting, are nothing like as important as ground-itch, as a source of infection.*

In concluding, I wish to acknowledge my indebtedness to Dr. Nicholson, of Richlands, for much contained in the above. The work was possible only with his hearty co-operation. I am also indebted to the North Carolina Board of Health, for both their financial and moral aid. To Dr. Cox, of Jacksonville; Dr. Harrell, of Tarboro; Dr. Hicks, of Dunn, I am very grateful for their support.

The General Practitioner and the Question of Consumption.*

By Paul Paquin, M. D., Asheville, N. C.

It is not necessary to present any of the countless existing statistics or data to demonstrate the fearful general slaughter of human beings by tuberculosis of various forms throughout the world. Every physician who reads and observes know that more millions are sent to their graves in a year by the germs of this disease alone than are killed by all the war dogs and all their ruthless instruments of death everywhere on earth in the same period. The laity

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

also, here and there, realizes this awful fact, particularly among families where the malady has consigned some member to the earth, and in populous or resort centers where the affliction is observed more frequently.

Yet in many places the ravages of the disease do not receive the thoughtful, serious and methodical attention they should from the class of humanitarians most closely in touch with the people at the earliest development of the malady; that class which consists of the family physicians, the so called general practitioners. They are the intimate counsellors of the people who know family histories. They are the advisors who see human life brought to light and who watch over the infants to childhood, maturity and death. They see first signs of health threatened by the scourge, they hear the first cough, they see the first blanching or blushing cheeks, they are notified of the first spitting of blood or hemorrhage, the irregular menses, the so-called "tired feelings," they observe early the scrofulous glands, hoarseness, adenitis. And still, with all those reminders of grave danger, how few of the victims escape the development of consumption to a serious and generally fatal issue? Is it not timely, then, to remark that many of the profession are not doing their full duty, not accomplishing the full object of the physician's mission which is as much to prevent disease and suffering as it is to try and cure them? Doubtless no one fails purposely to give proper advice to prevent tuberculosis, but there is a general apathy towards the situation, and the profession accepts its perils and disasters seemingly as if they were decreed and ordered by the Infinite and beyond human power to control. While few family physicians in their hearts do not realize the coming of consumption in patients yet so early in the clutches of the germs that no one else has the slightest idea of it, many too often brush the thought from their minds and entertain the forlorn hope that perhaps nature will arrest the threatening process somehow. Later, perchance, the physician may give a tonic on general principles. A little longer and cough begins to show that there is something wrong. He may then thump the chest cursorily over the clothing, listen in the same unscientific manner to the breathing and will perhaps say, "Oh, there is nothing wrong with your lungs—only a little bronchial irritation." And he will prescribe a cough syrup, perhaps one that will mask the symptoms without attacking the cause, thus giving to the patient a sense of security which is false. Or if the physician is more methodically trained and

habituated to make careful examinations and cautious diagnoses he may detect physical signs of danger but even then, too often alas, he makes light of the case, and acts with equal recklessness by not taking steps at once to give nature the best chance to cope with its invading enemies. What grand opportunities they have, these good, sincere, well meaning men generally, to prevent sorrow and pain, save life and serve civilization in the most noble manner!

You may say that the position I take here is exaggerated. Not so. Physicians who practice in resorts can testify that in the histories given to them by the thousands sent there to recover lost health there is almost always indication of early neglected opportunities to arrest their trouble and to save others in the family.

You may say also, as I have heard some physicians say, "It is no use to try. Consumption cannot be stopped." I answer: "Have we not before our eyes, scattered throughout the land, in resorts and elsewhere innumerable men and women who in years past suffered from more or less pronounced phthisis and who seem well today? who at least live comfortably and fulfill their mission in life practically as if they had never been infected? Have we not nearly all seen tubercular scars in healed lungs on the dissecting tables?"

These facts cannot be successfully controverted. But even if they could, what right have we as men pledged to the duties of Esculapius to lay down our oars on account of the gravity of the obstacles in our path of labor to relieve humanity? Who shall say that, by dint of observation, research, trials of preventative measures at an early date there shall not be discovered a preventative remedy? In any event and whatever private, professional or public opinion may be held, one line of conduct is plain and incumbent upon every sane medical man—it is that he should on every proper occasion use his knowledge and experience to further the enforcement of domestic and public sanitary rules to prevent and arrest consumption. So long as the profession, at the home, neglect to be specific and positive in their instructions on the question of transmission of tuberculosis so long will the people consider it lightly and sometimes nothing short of several deaths in a family by this malady will be needed to open the eyes of those interested. The laity, however, is, in large communities, considerably alarmed. Philanthropists are interesting themselves financially to aid the fight against tuberculosis in certain quarters. Nevertheless, we still have divided opinions even among men of standing

and thought. Only this last week a writer in *The Scientific American* makes the misleading and regrettable claim that the germs of consumption are "scavengers" rather than a direct cause of destruction of tissue.

So there is a tremendous task before the general practitioner which, with his opportunities for very early observation and treatment, he should apply himself most persistently to accomplish. From the home to school, the school to marriage and in the various stages of life, his families should look to him to prevent consumption and he should respond. He should act systematically to discharge his trust.

There are many plans which could be suggested for methodical, united efforts by each state medical association, each state governing power and the authorities of individual localities to curb the plague. I will not enter into details here. But I suggest that the North Carolina State Medical Association set the example by appointing a special committee on tuberculosis with instructions to set in motion any plan found by them suitable and practical to the end of carrying on jointly and harmoniously among the profession such researches and sanitary investigations as will tend to make every doctor a practical sanitarian on tuberculosis and to the end of aiding the general warfare being waged in this and other countries against the affliction. Much could be done by concerted efforts to eradicate the cause from the homes, the churches, the theatres, the schools the post-offices, the stores, the public conveyances, etc. And perhaps, if we are united and work well, we may succeed eventually in getting financial aid from the legislature.

NOTE:—In conclusion, to the end of starting the movement, I will in the proper time present a motion to this assembly covering the suggestions and field of work indicated in this paper.

Some Uses and Abuses of Glasses.*

R. V. Brawley, M. D., Salisbury.

Every one objects to putting on glasses and postpones the evil day as long as possible. A man says they are a nuisance and doesn't want to be bothered with them. He heartily avers that he sees well and his eyes are perfect. A woman also says they are a nuisance and that she has tried all kinds but can see better without them than with them; and, besides, they don't look well on her. But glasses are worn more nowadays than formerly, and we are often asked for an explanation. The accusation is often made also that oculists give chil-

dren glasses when it isn't necessary; that children never used to wear glasses as they do now, and they got along just as well. More children do wear glasses than formerly and the result is less serious trouble with the eyes of grown up children. How less common do you see crossed eyes today than formerly. Seventy-five years ago nothing was done for their relief; then operation became common and helped the situation slightly. Now nine-tenths of the incipient cases of cross eyes are cured by the use of glasses, if skillfully fitted. We know now that nervousness, dizziness, insomnia, neuralgia, indigestion, and possibly graver affections, are due to eye strain, at least, that this will act as an exciting cause where there is any predisposition to such disorders. The intelligent and conscientious physician is no longer satisfied with giving anodynes to little or no purpose in protracted or recurring headaches, knowing that their more frequent cause is eye strain, easily remedied by glasses correcting refractive errors or lightening the burdens of weak muscles. We have learned to recognize these eye affections and their numerous effects as we could not in former times; and the importance of correcting with absolute accuracy any existing error of refraction has long since become a truth too evident to require demonstration. However, I shall mention in as simple and brief manner as I can some of the different conditions of the refractive apparatus of eyes that constitute weakness and require glasses for their correction.

The eyeball may be too short or too long to form a perfect image on the retina; or the cornea may be abnormally curved, producing distortion and disproportion of the image. These three errors of the refractive apparatus of eyes are susceptible of many different degrees and varieties of combinations, and when either exists it places the eye at a corresponding disadvantage and precipitates sooner or later a failure of clear and comfortable vision.

When the normal eye looks at objects more distant than twenty feet, the rays of light from that object travel parallel and are brought to a focus on the retina, producing a clear image without any effort on the part of the refractive apparatus; but, if the object is nearer than twenty feet, rays of light emerging from it diverge and will not be focused on the retina of a normal eye without the aid of accommodation, and the nearer the object is brought the more accommodation will be necessary. This accommodation, as we know, is accomplished by a change of shape in the crystalline lens, brought about by the contraction of the ciliary muscle.

* Read before the recent meeting of the North Carolina Medical Society at Raleigh, N. C.

Associated with this power of accommodation is convergence, or the act of directing the visual axes of the two eyes to one object, so that the image may be focused on the macula of each eye.

In myopia, or near-sightedness, the antero-posterior diameter of the eyeball is too long, and the rays of light come to a focus in front of the retina; we therefore have no need for accommodation and, if its fellow eye has the same degree of lengthening no evil reflex trouble results. But the patient is at a disadvantage in not being able to see well at a distance. He fails to take proper exercise and on account of his indoor life seeks occupation and amusement within his own limited circle of vision, and, unfortunately, herein lies his greatest danger. By holding his books and implements close to his eyes, he is able to see distinctly, but in so doing he strains his power of convergence excessively, producing ocular congestion and compression of the eyeball; and by bending over he affords a favorable position for the distension of the ocular veins. The coats of the eyeball already of weakened resistance and put upon the stretch are further pulled and damaged; the nutrition of the eye is seriously disturbed, and, as a result, the choroid becomes diseased and this causes associated retinal changes and vitreous opacities, resulting in almost complete blindness. If proper glasses are prescribed early and worn constantly myopia is not liable to progress and will remain more or less stationary throughout adult life.

The hypermetropic, or far-sighted eye, by reason of its antero-posterior shortening, is unable to focus rays of light upon the retina, and accordingly, accommodation is necessary to see objects at any distance distinctly. Such an eye is using its accommodation constantly; even distant vision, which in the perfect eye is a passive sensation consistent with entire rest of the organ, requires an effort; and the work of the ciliary muscle is necessarily much greater when near objects are to be seen. If additional demands are made upon the accommodation, as for continuous reading, writing or sewing, the muscle is found unequal to the task and pain is felt not only in the eyes and head but reflex symptoms in almost any part of the body. By means of this accommodative effort hyperopia, up to a certain point, varying with each individual, is involuntarily corrected. However, we can readily realize the result of a constant strain on this highly organized structure; nervous energy is consumed and the nervous equilibrium is disturbed, with the result, not only of annoying local symptoms of pain, fatigue and congestion, but

more remote reflexes, such as headaches, gastro-intestinal disturbances, and many general neurotic disorders. As the correcting effort of the ciliary muscle is involuntary, the resulting annoying symptoms can only be relieved by proper correction of the defect which necessitates the ciliary contraction. Very often if a child is hyperopic to some extent and unequally in the two eyes, to avoid the discomfort of a blurred or double image, one eye is turned in and becomes amblyopic. It has been estimated that four-fifths of the cases of convergent squint are caused by hypermetropia. We, therefore, see how very important it is to examine carefully the refraction of an eye beginning to converge in a child.

Astigmatism, or malcurvature of the cornea, exists to some extent in the vast majority of eyes and most often with hyperopia or myopia. Over this defect the compensating mechanism has almost no power, for the muscle is constantly contracting unequally trying to correct the unequal meridians of curvature of the cornea, and in a sphincter muscle like the ciliary muscle, two-sided action even of a lower power is, of course, essentially morbid. If there is an abnormality in the measurements of the eyeball as great as one three-hundredths of an inch there is lack of a perfect image on the retina. To overcome this the eyes in hyperopia and astigmatism must struggle ceaselessly. Both retina and muscles are tired by this effort to focus; persistent innervation, coupled with abnormal actions of the muscles is harmful and impossible. Such continuous and unequal accommodative effort must result in eye strain and consume much of the normal nervous energy, eventually producing reflex manifestations of disturbance of the nervous equilibrium. Therefore, an astigmatic or hyperopic person may be able to improve his vision at the expense of severe headaches, nausea, indigestion and inability to perform near work. Many of our ocular diseases, such as conjunctivitis, blepharitis, chalazions, styes, etc., are largely due to refractive errors, and when corrected by properly adjusted glasses, the cause being remedied, a cure is effected.

Not only must the eye be accurately focused in order that a perfect picture shall be formed on the retina, but the two eyes must maintain such a relation that this picture shall strike corresponding portions in each. This is accomplished by the twelve small extra-ocular muscles, and from no other class of muscles is such perfect exactitude of service and nicely associated action so constantly required. When one contracts, another must relax, so that a perfect

equipoise may be kept up at all times. This muscular balance is maintained by the constant and equally distributed innervation of the ocular muscles. During the working hours, all the muscles are in a state of unconscious contraction, and every act of sight is accomplished by more or less expenditure of nerve force. Any irregular action of these muscles is usually dependent upon some optical defect and the increased nerve impulses thrown out to bring about accommodation to correct the optical defect are, at the same time, sending an extra stimulus to the extra-ocular muscles. This necessary extra expenditure of nervous energy is a great factor in the causation of reflex symptoms resulting from eye strain.

Difficulties attending either one or both of these functions, or irritations arising from the nerves involved in these processes are among the most prolific sources of nervous disturbances, and more frequently than any other condition constitute a neuropathic tendency.

When we consider the complicated arrangement of the nerves of the iris and the ciliary processes and the unnatural and excessive effort that is put on the filaments of the nerves of accommodation, there can be no cause for wonder if in the course of time there is set up a reflex condition of the sympathetic system that will produce nervous symptoms varying in different individuals.

Having mentioned in a broad way some of the uses of glasses we must also keep in mind their abuse by almost any one who may choose to prescribe. It is a prevailing opinion of the public that fitting glasses is an easy matter, that those who choose may do so for their own financial benefit, notwithstanding the fact that they have never received a medical education nor any special preparation or experience in this line; many of them having only the faintest idea of the first principles of optics which alone make up a small part of the proper fitting of glasses. The glasses they furnish are injurious to the eyes of those wearing them; they think that all eyes with defective vision need glasses, fit patients with them when the defect is due to some pathological lesion.

Dr. Gould says "Every pair of lenses worn by every person in the world has a medical and pathological significance." Accepting this eminent authority on refraction and knowing that properly fitted glasses will improve the eye and health and relieve ocular symptoms and various reflex neuroses, is it not reasonable that improperly adjusted glasses will produce the same pathological conditions?

There is an intimate relationship between

the practice of ocular refraction and physics but we must not regard the matter from a too mathematical point of view. We should consider our subjects as patients and not merely as possessors of optically imperfect eyes.

In the proper hands there is no one thing that relieves so much suffering as glasses. They give useful sight to countless numbers who were otherwise crippled by imperfect vision. Many who do not use them would be better off if they did, receiving the benefit of greater convenience in the increase in vision, greater safety to the eye, preserving it from those disastrous effects of strain, retinitis, choroiditis, glaucoma and cataract, and enabling little children handicapped by imperfect vision and unjustly condemned as being dull or inattentive, to compete successfully with their companions. They may not be becoming, but neither are headaches, bloodshot eyes, wrinkled eyebrows, half-closed lids or a squint.

As knowledge accumulates concerning the science of adapting lenses to the correction of nature's errors of refraction, the importance of consideration of the conditions involved in these errors are becoming more and more recognized and glasses will not be condemned as a nuisance or an evil but as a great means of relieving sufferers and increasing their usefulness in the world.

A Protest Against the Indiscriminate Surgical Operations Upon the Female Organs of Generation. *

By Armistead K. Tayloe, Tarboro, N. C., Fellow of the Medical Society of the State of South Carolina; Fellow of the Seaboard Medical Society of Virginia and North Carolina; Fellow of the Georgetown Medical Society; Ex-Surgeon A. C. L. Co. and G. & W. Railroad; Ex-President City Board of Health, Georgetown, S. C.; Member of the American Medical Association.

Mr. President and Gentlemen:

When I received a letter from your chairman on the section of Gynecology, requesting me to prepare a paper for this meeting of the North Carolina Society, it was with a mingled feeling of regret and pleasure, that I accepted; for I had made up my mind to come to Raleigh on this occasion, knowing that a pleasant and profitable time awaited me, but, I also remembered, that I had promised myself that if ever I contributed another paper to any medical society, the above title should be my text. And, I am free to say that for one whose observa-

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tions and experience is as yet in its infancy, I fear that I am treading on somewhat dangerous ground. But be that as it may, I only hope, and that is the utmost that I desire, that I may speak no word other than the truth and express no sentiments that will antagonize the two distinct elements of our profession (the conservatives and the radicals). But believing, as I do, that the pendulum has swung too far and feeling that the trammels of custom have long enough prevented the younger members of our craft from expressing their observation and experience frankly, I resolved that complying, I would for the sake of our profession, and for the sake of the weaker and fairer sex, that I would speak a word of protest; and, shall deem it the proudest work of my life, if this hastily written and imperfect paper shall be in the slightest degree instrumental in bringing about a spirit of conservatism, and prove of benefit to womankind.

In the year 1809, a Kentuckian in the person of Ephriam McDowell, performed the first ovariectomy known to the civilized world, which has shed a luster upon his name that nothing can ever dim; yet, like everything else that has a power for good, it has a power for evil as well. Robert Beatty, of Georgia, and his disciples in this country, went about the same work; Lawson Tait, of England, and others in the British Isles; many German and French operators, and a host of others, whose names I cannot, and do not care to recall, made their appearance with scapel in hand, upon the field of battle, in the smoke of which they lost sight of man, and thank God, for this. But poor woman, fell victim to those discoverers and her pelvis was a most fertile field for adventure. Every few months, weeks, if you please, you would hear of some new condition for which ovariectomy was practiced, and some new method of doing it, each said to be better than the other; but, all having for their object the radical removal of everything in sight and many things out of sight, but unfortunately not out of reach. Like a rushing mountain stream, that tears every rock and crag from its path, gathering volume as it goes. It was all done in a struggle for womankind, mingled with a feeling, perhaps, to out do the other in the race for supremacy, and have they not left behind a trail of mistakes, disappointments and misfortunes? It is not necessary to dwell on the dark side of our past affairs, and it is not the meaning or desire to be understood as pointing out their mistakes as faults—for I would not underestimate or undervalue the brilliant achievements of those heroic and faithful workers. I speak of the past that

we may take warning for the future, and profit by the experience of those explorers, and that womankind may receive the benefits of their mistakes. There is a restlessness existing among us, and here is where the evils of the hour have arisen. Past experience inspires me with the confidence that the day will come, in fact there is an earnest effort towards conservatism, when we will operate for disease and not for symptoms; and operations upon the pelvic organs, and the floor that supports them will not be done as a panacea for all the aches and pains of women, as has hitherto been too recklessly done. There was a time when you could not take up a medical journal without seeing a report of a large number of cases of complete oophorectomies and hysterectomies. You rarely attended a society meeting that you did not hear a large report of such cases. How many reported conservative work? You could count them all on the fingers of one hand. I desire to say, just in this connection, that there is a great deal of senseless praise for surgical operations (as though it were a remarkable achievement to do a complete hysterectomy or double ovariectomy). Oh, my fellow practitioners, it is not how much we remove, but how much we save, and how useful it will be. Van Buren struck the key-note when he said: "It is a popular (I may say a vulgar error) which is quite prevalent in regard to the surgeon, that his highest function is attained in a brilliant operation, but in truth, a still greater degree of merit, is shown in the avoidance of an operation, when this is possible, by means of fuller pathological knowledge. He further says, that a good surgeon can never cease to be also a fairly good physician. A surgeon not a physician is as a bird with but one wing."

There was a time when we could afford to display only a moderate amount of conservatism on account of the danger of infection, but in this day of enlightenment when the microscope has discovered the "prince of the power of the air" and since the birth of antiseptics the prevention of wound infection and the blessings of anesthetics, rendering the otherwise imperfect technique ideal, it behooves us, gentlemen, to practice the utmost conservatism on the organs of generation. It is a question that no conscientious medical man can, in honor or courage, disregard. It is a question that involves the life, health, and happiness of an individual. How many lives have been made miserable, how many homes desolate, by the indiscriminate use of the knife in the hands of some unscientific or perhaps over-zealous aspirant for surgical honors. Never did A. Palmer Dudley utter a better

truth than when he said before the American Medical Association, at its last meeting in New Orleans: "How many thousands of suffering, misguided women have offered up their pelvic organs, as a sacrifice, for the simple promise from an ambitious aspirant for professional preference, that such sacrifice would immunize them from all future unpleasant conditions peculiar to their sex and how bitterly have those poor misguided women regretted in the years that have followed their misplaced confidence so generously bestowed, when the knowledge was forced upon them by sad experience that they had exchanged one condition of suffering for one equally as disagreeable." But such is life in all things experimental and our profession has never been an exception to the rule.

What are the functions of the ovaries and what the effects of their removal? Besides menstruation and ovulation sufficient evidence has been offered to show that they secrete a substance which plays an important part in the economy, especially upon the nervous system. Just what it is, how elaborated, and its importance is not fully known. It is not within the province of this paper to discuss the great question of the physical, mental and moral effects of removal of the ovaries. And, it is only in a brief and superficial way, that I wish to invite your attention.

The majority take on fat, become more masculine in appearance, as well as in other respects, vaso-motor symptoms are most pronounced, such as hot flashes, pain in the head and pelvis. hot and cold sweats, vertigo, and other distressing symptoms, too numerous to mention. The most persistent and profuse leucorrhoea I have ever encountered, was a result of the removal of both ovaries, vicarious menstruation does occur, but is rare. The nervous symptoms are most pronounced and distressing and the mental condition is often pitiful. The moral effect is largely governed by age, temperament, physical condition and social standing. Any woman who has a great deal of force of character and who is fond of home life, who has not passed the child bearing period, will grieve over the loss of her organs, it matters not whether she be married or single, she feels that she is branded for life and is ostracised from society by reason of her own feelings. She is humiliated and shy—she thinks that every one with whom she comes in contact knows it—she becomes nervous and emaciated, hysterical, demented and like the evil spirit, of which we read, it overcomes her, breaks down her nervous system, and insanity claims her for its victim. The psychic effect following the removal of the ovaries, is in

the inverse ratio to the age of the woman operated upon.

In 1901, I was consulted by an unmarried lady, 26 years of age. Her family physician had advised the removal of her ovaries on account of dysmenorrhoea and some nervous symptoms, assuring her that the ovaries were responsible for her entire condition. Upon careful examination, under chloroform anaesthesia, I did not find anything to justify so radical a procedure and so advised her; but, she having every confidence in her family physician and having made up her mind that her ovaries were diseased, my remarks were not consoling and like, Rachael, weeping in the wilderness, she refused to be comforted. She was later operated upon by a surgeon in one of our Southern cities, who removed both ovaries. She made an uneventful recovery and returned home in six weeks but, it was only a short while before she became nervous and hysterical, suffered pain and took opiates, gradually became demented, and finally became a raving maniac, and was sent to an institution for treatment, where death soon released her from all suffering and trouble.

There is another type of woman that is of a neurotic temperament, that has a natural inclination for high life, the lady of leisure, so to speak, who's figure is her charm, who drinks Mums extra dry with the boys, attends all the fashionable watering places, whose system is greatly impaired by reason of her dissipation. Cut her ovaries out, and I'll promise you that she will go the limit; she is irritable in temper, impulsive, and grows more and more dissatisfied with her surroundings at home. If she be a married woman there is a feeling of *distrust* on the *part of both*; she no longer appeals to his sexual desire and he loses confidence in his spayed wife, and as a natural sequence, domestic unhappiness follows. Such a woman is perfectly sane and responsible in every way, but there becomes a total loss of the moral sense which paves the way for all manner of evil doings and the commission of all kinds of crimes.

Why is this true, and I know it is true. Is it the loss of the moral sense or the knowledge of the ablation? Much is hidden from the eye of every physician, possibly many cases of this kind, due to the secret vice, escape his knowledge. I know of several cases in young women, gifted by nature with high talents, fitted to be a benefit and an ornament to society, sink into such a state of physical and moral degradation, as wrings the heart to witness.

I have given this part of the question a most painstaking observation and study for the past seven years, and I am thoroughly convinced that the unsexing of a certain

type of young women ruins her morally. There is a type of woman that is so bitterly opposed to becoming mothers, that they will intentionally deceive an operator, if possible, in the hope of having those organs destroyed, which God gave them for noble purposes and which have been both her glory and her weakness. They hate children worse than the devil hates "holy water," but think more of a poodle dog than some parents think of their children.

In the time at my disposal it will be impossible to treat this question in a fitting manner, as I have previously said. I shall now in a sweeping way tell you the conditions for which indiscriminate surgery is practiced and I want to head the list with the so-called cystic ovary, just simply cystic. For every normal ovary you will find twenty cystic. I would like to see a few normal ovaries, perfectly normal, then perhaps I would be able to appreciate the well known cystic ovary. If it were cystic, remove the cyst and leave the ovary; if dermoid, take out both the cyst and the ovary, and be sure to leave nothing behind. The next one on the list is the so-called enlarged or swollen ovary, it is tender on pressure, it is frequently encountered. Did you ever see a man with an enlarged testicle, swollen and tender? Did you ever hear of one being castrated for such a condition? The next condition is abscess of the ovary. Remove diseased tissue and leave as much of the ovary as is consistent with your judgment. Every case is a law unto itself, even in septic cases healthy portions may be spared, particularly in young women. The next condition for which the ovary is held responsible and has to be removed is in so-called reflex condition. You find that condition in nervous, hysterical women, who have marked nervous symptoms, just before or during the menstrual flow. For every woman who is relieved by a radical procedure, ten are made miserable for life. The next condition for which ovariectomy is practiced is in reducing the size of fibroid growth. I would prefer removing uterus and leave ovaries, wherever it is possible, but fibroids of large size gradually encapsulate the ovaries and are so thoroughly blended that isolation and separation are out of the question. No doubt, many myomec-tomies will take the place of hysterectomy. All inflammatory conditions in the pelvis which are resulted in binding down the ovaries and tubes, should be released and not removed, as has too often been done, in such cases. Lacerations and syphilitic conditions of the cervix should be carefully examined macroscopically and microscopically, before contemplating removal of the uterus. I honestly believe that these condi-

tions have frequently been mistaken for cancer of the cervix and the organs sacrificed as a result of such a diagnosis.

Dysmennorrhoea.—I do not believe that any conscientious surgeon with a sound mind would remove the ovaries in a young woman to relieve this condition, per se. And it is rarely, if ever, justifiable in those more advanced in life.

Dr. S. Weir Mitchell, in the University Medical Magazine, March, 1897, says: "In no case seen by me had ablation of ovaries and termination of menstruation cured epilepsy. I have never sanctioned such operations where appendages were sound; I have agreed thrice to these operations, with such pelvic disease, as of itself, would justify ovariectomy. In all three after some delay, the fits returned, and were in no way permanently aided. I recall as an illustration, a case in which there was epileptic attacks of great severity, only after the menstrual epoch. The ovaries were apparently sound, but as two physicians and a surgeon were against me, my opinion was not regarded and ovariectomy was performed. The attacks which had been daily were stopped for seven weeks after the operation and the case was hastily spoken of as a great triumph the patient, however, then became worse and permanent loss of mind resulted. In all my life, I have never met with but four reflex epileptics, none were from uterine or ovarian or tubal disease."

Dr. Mitchell further said that because an insane woman is usually worse at her periods is no reason why the flow should be stopped by operation; that the climacteric puts an end to those disorders is an old delusion, and in fact the change of life, so-called, is quite as likely to make them worse as to better them. It has been a custom, so it seems, among a number of operators to remove opposite ovary and tube in certain conditions, even though they appear healthy claiming that it is liable to become diseased also. I desire to ask you, if you remove the right breast, if it is not involved, while operating for cancer of the left? Do you remove the left eye for cancer of the right? Do you remove the left testicle for malignant growth of the right? I pause for a reply. Why then make an exception in the case of the ovaries? When the opposite organ appears healthy leave it; any other teaching to my mind, is not only an error but a blunder unwarranted, either by analogy or by fact. It is as irrational as it is untrue. There is such a thing as being ultra conservative, as well as too radical but I know, and every man within the sound of my voice knows, that there has been too much cold-blooded surgery practiced upon the female organs of generation. Those

who have had ample opportunity and time have been taught by sad experience that they had been too radical and the tide is beginning to turn, for the trend of gynecologic work to-day is by those who know, towards conservatism. But it seems that many of the younger members of our profession are just beginning where the others left off. Symptoms referable to the pelvis do not always mean diseased ovaries or diseased tubes or diseased uterus, but she who so complains is still in danger. Bear in mind that many of the pelvic symptoms are but an expression of constitutional pathological conditions, which calls for general medical treatment. He who expects to find the female organs perfectly normal, both as to condition and position will never find what he seeks. There is nothing without its imperfections and these organs are no exception.

The indiscriminate carving away of the uterus and its appendages is one of the evils of the times. My fellow practitioners, have you ever stopped to think of the unhappiness and suffering that are brought about by indiscriminate work of the various minor causes for which it is done. It takes away from married life the woman's brightest and most natural hope and the husband's highest inspiration, and puts the unmarried woman outside the social world.

"It is the nature of every herb, that it yieldeth seed, and of the fruit tree yielding fruit, that its seed is in itself."—Gen. 1: 12.

"It is the nature of every being creature to be fruitful and multiply."—Gen. 1: 12.

Let us then fellows, for the love of our profession and of humanity, dedicate and devote our time, our talents, and our labors in the preservation of the reproductive organs, whenever possible, and not everlastingly be scheming to inaugurate some new device to get rid of them. "Fidelity to nature should be our motto."

Medical Dietetics in General Practice.

By Geo. P. Edwards, Sylva, N. C.

Very often the physician in general practice is confronted with the question: What shall the patient eat? It may be asked by some relative or friend of the patient, by the patient himself or it may arise in the mind of the physician. It should always be thought of by the physician. In the great majority of cases which we are called upon to treat the question is pertinent and should receive attention commensurate with its importance as a therapeutic measure. Far too often the answer is given, "eat anything you like."

By giving this answer the physician virtually ignores important fundamental principles of therapeutics or disregards the best interests of his patient. To rely wholly upon the effect of drugs in the treatment of diseased conditions is, I am convinced, an injustice not only to the patient but to the physician as well. It is utilizing only one of the many efficient measures at our disposal for the scientific and rational treatment of the sick, and to disregard hygienic conditions may result in undoing or preventing any good that might otherwise be expected from medicines given. To allow a patient suffering from incipient tuberculosis to sleep in a room whose air is impregnated with the germs of consumption and with fresh air excluded is almost sure to negative any line of treatment with drugs which may be employed.

Likewise in cases of gastritis, colitis, nephritis, rheumatism, typhoid fever, cholera infantum and a host of other maladies which are influenced by the character of food ingested, we cannot expect good results from medication so long as the matter of diet is neglected.

To be able to utilize to advantage the principles of medical dietetics in the treatment of the sick is of prime importance. It will greatly increase confidence in the physician and materially improve the chances of recovery in any given case.

It is a well known fact that various foods influence the body differently even in health and it has long been known that the use of various articles of food produce different effects upon the system in disease from their use in health. Many articles which may be taken apparently without detriment in health, become if taken when the system is suffering from disease, cause of serious difficulty. It has also been observed that certain articles of diet exert a favorable influence on the system during the progress of some morbid condition, hastening recovery and even exerting a marked remedial influence. Hence have arisen various "cures" such as the "grape cure," "whey cure," "buttermilk cure" and others in which the diet has consisted wholly or largely of some particular article which seemed to be especially well adapted for the condition under treatment.

In many diseases such as typhoid fever and the summer complaint of children, careful regulation of the diet constitutes by far the most important measure of treatment. Again, articles of food which would be well adapted for use in one malady might be entirely contraindicated or even injurious in another.

A very large proportion of the ills of mankind are caused directly or indirectly by errors of diet—errors in the quantity or

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

quality of food taken or in the manner of preparing the food. Dyspepsia in its numerous forms, gastralgia, gastric ulcer, colitis, gastric dilatation, scurvy, certain forms of anemia, various hepatic disorders, intestinal catarrh, dysentery, constipation and the great variety of pathological manifestations which follow in its wake, may all be traced directly to errors in diet. Indirectly, gout, rheumatism, diabetes, appendicitis and chronic nephritis frequently have their origin in errors of diet. In all these cases it is apparent that to correct the dietetic error causing the trouble will be a long and proper step in the process of effecting a cure. Indeed in order to obtain satisfactory and permanent results in all these cases the regulation of the diet is absolutely essential.

In typhoid fever, pneumonia, measles scarlet fever, small pox, influenza, diphtheria and in fact in all acute febrile affections the digestive function is very much disturbed. The active principles of the gastric and intestinal secretions are apparently very much diminished and consequently the power of the digestive organs to handle food is at a very low ebb. For this reason the selection of a suitable form of nourishment is of prime importance. Coarse, solid or improperly prepared food given in such cases is often injurious and may be a cause of serious disaster. Many a case of typhoid fever has had a fatal termination because of insufficient care in the matter of diet. Improper food taken in these acute diseases being undigested often undergoes fermentative or putriferous changes and thus instead of supplying nourishment, becomes a source of danger to the already imperiled organism. Hence the importance of a practical knowledge of foods and of their relation to the body in a state of disease.

In giving directions for the diet of a patient we must know the pathological condition present. We must bear in mind approximately the nutritive value of the various foods; we should take into consideration the composition of foods especially as regards the proportion of proximate principles—proteids, fats, carbohydrates, water and various salts, which they contain.

In order that the human organism be properly nourished it is essential that all these proximate principles be supplied and they must be supplied in certain proportions. To attempt to nourish the body on either proteids, carbohydrates or fats exclusively for any length of time would be disastrous. If some carbohydrate food alone were used, such as potatoes, it would be necessary to consume the enormous amount of 12 lbs. daily to get the required amount of proteid. Of cabbage one would need to

to eat about 17 lbs. daily. No human stomach could long stand such a strain. Or if some food of the proteid class were taken, such as beefsteak alone one would be obliged to eat about 5 lbs. daily in order to get sufficient of the non-nitrogenous element. To get rid of the enormous superfluity of proteid element in such a diet would greatly overtax the kidneys and liver and if continued for any length of time would result either in serious kidney lesions or pronounced autointoxication, probably both.

Many and extensive experiments with large bodies of men under varying conditions have shown that the proper proportion of food elements is one of the nitrogenous to about five or six of the non-nitrogenous counting fats and carbohydrates as non-nitrogenous.

Most articles of food are deficient in one or the other of the proximate principles. For this reason a variety of articles must usually be taken in order to obtain the correct proportion of elements. Of the animal foods milk comes nearest having the right proportion of elements and of the vegetable foods wheat is almost perfect containing as it does about 13% of the nitrogenous or proteid element and about 72% of the carbonaceous. This relates to the whole wheat and not to the ordinary white flour which is very deficient in the proteid element. Oatmeal or rolled oats is another food which if properly cooked will provide the system with nutritive elements in the right proportion. Even with these foods however it is advisable as a rule to take some other food containing an abundance of proteid to make sure of maintaining the nitrogenous equilibrium.

To give a complete table of foods and their composition is beyond the scope of this article, but a brief classification of the more common foods may not be out of place.

It may be seen by the table given that the grains—wheat, oats and corn—supply the various food elements in nearly the right proportion for the best nourishment of the system. It should be observed also that the amount of cellulose in these grains is considerable. This fact may be taken advantage of when prescribing a diet for a patient suffering from chronic constipation, the cellulose material of the grains being a natural stimulus to peristalsis. The various preparations of the entire wheat now obtainable anywhere in the country are excellent additions to the diet of that large class of patients suffering from intestinal inactivity. Entire wheat bread may be used with great advantage by people in health as a measure of prophylaxis against constipation and the numerous train of diseases

TABLE OF NUTRITIVE VALUE OF COMMON FOODS
According to report of U. S. Dep't. of Agriculture.

Food Material	Water	Proteid	Fat	Carbo- hydrates	Cellulose
GRAINS, FLOUR, ETC.					
Oat Breakfast Food	7.7	16.7	7.3	66.2	2.1
Entire Wheat Flour	11.4	13.8	1.9	71.9	8.3
Corn Meal	12.5	9.2	1.9	75.4	2.0
Rice	12.3	8.0	3	79.0	.4
Tapioca	11.4	.4	1	88.0	.1
Rye Flour	12.9	6.8	9	78.7	1.7
VEGETABLES.					
Beans, dried	12.6	22.5	1.8	59.6	3.5
Lima Beans, dried	9.0	22.1	1.6	69.5	4.0
String Beans	83.0	2.1	3	6.9	.7
Peas, green shelled	74.6	2.0	2	16.9	1.0
Corn, green	75.4	3.1	1.1	19.7	.7
Sweet Potatoes	55.2	1.4	.6	21.0	.9
Irish Potatoes	62.6	1.8	.1	14.7	.8
Squash	44.2	.7	.2	4.5	.4
Beets	70.0	1.3	.1	7.7	.9
Cabbage	77.7	1.4	.2	4.8	1.9
Onions	78.9	1.4	.3	8.9	.5
Tomatoes	94.3	.9	.4	3.9	.5
FRUITS					
Apples	63.3	.3	3	10.8	1.3
Grapes	58.9	1.0	1.2	14.4	3.4
Peaches	81.0	.7	—	4.5	6.1
Oranges	63.4	.6	—	8.5	5.4
Strawberries	85.9	.0	.6	7.0	2.6
Dates	13.8	1.9	2.5	70.6	1.2
Figs	18.8	4.3	.3	4.2	12.4
Pruces	29.3	2.3	—	44.4	4.5
NUTS					
Walnuts, English	1.0	6.9	26.6	6.8	.6
Pecans	1.4	5.2	33.3	6.2	.7
Peanuts	6.9	19.5	29.1	18.5	1.5
Chestnuts	4.5	8.1	5.3	56.4	1.7
Hickory nuts	1.3	5.8	25.5	4.3	.8
ANIMAL FOODS					
Beefsteak, round	90.7	19.0	12.8	—	7.2
Porthouse steak	54.4	19.1	17.9	—	.8
Mutton, average	42.0	13.5	28.3	—	.7
Salt pork	7.9	1.9	86.2	—	3.9
Ham	34.8	14.2	33.4	—	4.2
Bacon	17.4	9.1	62.0	—	4.1
Fish, average	50.0	12.8	4.2	—	.9
Eggs	65.5	12.1	9.3	—	.9
Milk	87.0	3.3	4.0	5.0	.7
Butter	11.0	1.0	88.0	—	3.0
Cheese	34.2	25.9	33.7	2.4	3.8

which follow in its wake. Bread stuffs of various kinds should form a large share of the diet for that numerous class of patients suffering from dyspepsia in its various forms, for in these cases a dry diet is much better than the sloppy foods so commonly used. Breads require thorough mastication and this conduces to improved digestion. Unfortunately the art of mastication has become almost obsolete among American people and in consequence that hydra-headed monster dyspepsia stalks abroad in the land and a new occupation called dentistry has arisen in a desperate effort to preserve portions of the human body which Nature, seeing unused, was gradually removing.

Relative to the great variety of crackers and biscuits on the market it may be said that most of them are objectionable because made of fine white flour and containing as they do considerable soda and in some cases the flour of which they are made being adulterated with various mineral substances. The graham crackers on the market are usually sweetened and shortened which renders them unsuitable for the sick. The same objections apply to cakes, pies

and confectionery in general, and those active individuals, full of mistaken kindness, and given to supplying their sick friends with dainties of all kinds need instruction.

While the grains in general contain the various food elements in about the right proportion there are some exceptions which should be noted. Rice and tapioca are deficient in fat, and the percentage of proteid which of all the food principles is considered most essential, is in these articles comparatively small. The amount of cellulose in rice and fine white flour bread is very small. This accounts for the constipating effect which often results when these foods form a large share of the diet. Rice, however, is easily digested and when supplemented by some food containing a large amount of proteid and fat, such as eggs, it forms an excellent food for a large class of invalids. This combination is well adapted to those cases in which there is a tendency to diarrhœa and in cases of impaired digestion and general feebleness.

Of the many cereal breakfast foods in common use, rolled oats, rice, rolled wheat and corn meal are the best and they are also the cheapest. These cereal foods should be thoroughly cooked. Cooking them a few minutes before breakfast is not sufficient. Raw grains will cause trouble on a sensitive mucous membrane. They should be cooked at least one hour and when done should not be sloppy, but rather quite stiff and dry in order that they may be more thoroughly masticated. The double boiler or steam cooker is the best arrangement for cooking grains. An improvised double boiler may be arranged in the poorest household by simply placing the vessel containing the grain (it may be an ordinary tin can) in a larger vessel having a rounded bottom and containing some water—all to be tightly covered.

Cooked in this way the grains do not require to be stirred and when served with cream or thick fruit juice and eaten with zweibach they constitute an excellent diet for many invalids.

The first water to go on the grains for cooking should be boiling hot in order that the cellulose envelop surrounding the starch granule may be burst open, thus giving the digestive juices easy access to their contents.

Fruits.—In a great many diseases no food is more acceptable to the sick than fresh fruits. Most of them do not contain much nourishment, but when thoroughly ripe are easy of digestion and supply the system with a very refreshing form of light nourishment which, in acute troubles lasting only a few days is amply sufficient for the best interests of the patient. In diseases running a longer course fruits may be used

with great advantage as supplementary to the more nourishing foods. The juices of fruits are very efficient intestinal antifermentatives. This is especially true of the grape, lemon, orange, peach and blackberry. The juices of these fruits may be given with great benefit in typhoid fever and in all pathological conditions of the intestinal tract with the exception of acid dyspepsia and gastric ulcer. The juices of the blackberry having a slightly astringent effect on mucous membranes is especially useful in diarrhoeal conditions. A combination of some fruit juice with the white of egg and a little sugar is a valuable form of nourishment in many diseased conditions of the alimentary tract. It is simple, palatable, soothing to an irritable mucous membrane and very nutritious. I always employ this combination in acute enteritis, ilio-colitis and gastritis, using the juice of blackberry in preference.

Fruits in general are somewhat laxative to the bowels. Owing to this property they may be prescribed with advantage in cases of chronic constipation and in other conditions where for any reason the bowels are temporarily inactive, as is often the case during the puerperium and in other conditions requiring confinement, as after surgical operations. It is far better to correct abnormal conditions of the bowels by regulating the diet than by depressing cathartics. Apples, prunes, oranges, figs and tamarinds are perhaps the most useful laxative fruits. On account of the large amount of water which they contain fruits are well adapted to cases of nephritis.

Vegetables.—Relative to vegetables, I cannot do better than to quote from Kellogg, who has made extensive research in all matters pertaining to diet. He says: "Coarse vegetables are objectionable articles of diet for the sick; first, on account of the large amount of woody matter which they contain which renders them difficult of digestion and liable to produce irritation. Second, on account of the large proportion of starch of inferior character and difficult of digestion, and hence more liable to undergo fermentation, developing injurious acids and troublesome gases. The diseases in which vegetables should be wholly interdicted, or very much restricted, are as follows: Painful and flatulent dyspepsia, gastric ulcer, cancer of the stomach and atonic dilatation of the stomach. Bright's disease requires that the patient should abstain from the use of asparagus, turnips, cabbage, carrots, beans, peas and all other vegetables which contain a large amount of woody fiber.

Tomatoes, ordinarily wholesome, are thought to be injurious in diabetes insipidis,

and asparagus is by many physicians interdicted in rheumatism. Asparagus and beans should be abstained from whenever they produce pain in the region of the kidney, with deposit in the urine.

If there be no contraindications, the free use of vegetables is especially indicated in constipation of the bowels, in scurvy, and in many cases in which patients have for a long time been deprived of them."

Meats or Flesh Foods.—Flesh foods, in general, contain a large amount of available nourishment. As may be seen by reference to the above table of food values the percentage of the proteid element in meats range from 13 to 20, but on account of the considerable amount of excrementitious or waste products contained in flesh foods, they are unsuitable for those patients whose powers of elimination are weakened. This is especially the case in acute and chronic nephritis, in scarlatina, diptheria, and inflammation of the liver. In all acute infectious diseases the eliminative organs are heavily burdened. This is decidedly true in cases of malarial fever, rheumatism, scarlatina, typhoid fever, pneumonia, measles, variola and diphtheria. To increase this burden by giving foods heavily loaded with excrementitious products would not be in accordance with rational therapeutics. Hence, the use of flesh foods in these diseases should be very limited. In the light of modern physiological chemistry the use of beef tea in typhoid fever and allied conditions is seen to be a mistake.

Bouchard in his work on auto-intoxication says "the animal organism is a veritable laboratory of poisons," and he shows that the urine of animals when fed on meats is far more toxic than when kept on a non-flesh diet.

Alexander Haig gives abundant evidence that the use of flesh foods is an important factor in the etiology of that class of disorders characterized by the so-called uric acid diathesis. In view of this it would be well in these cases to wholly interdict the use of flesh foods for a time, at least, and limit their use after recovery. When we remember that the effect of a meat diet is stimulating and causes a considerable increase of blood pressure, the wisdom of restricting the amount of flesh foods in cases of cerebral congestion, apoplexy, arterio-sclerosis and valvular heart disease is apparent.

Because flesh foods readily undergo decomposition, their use in acute intestinal disorders and in cases of dilated stomach and gastroptosis should be limited.

If there are no contraindications, if the kidneys are sound, arteries in good condition and digestive organs doing fair work, meat may sometimes be used with advan-

tage in diabetes mellitus, general debility, acid dyspepsia, and various convalescent states.

Whenever flesh foods are excluded from the diet it is important that some other article containing an abundance of the proteid element be given in order to maintain the nitrogenous equilibrium and sustain the strength of the patient. Eggs, milk, entire wheat, oatmeal, nuts and gluten will serve the purpose admirably.

In closing this brief and incomplete discussion of the broad subject of medical dietetics, I would mention a few general principles which are of the utmost importance in regulating the diet of the sick.

1. During the onset of all acute infectious diseases, all foods should be withheld for a time. To cope with the disease the organism has enough to do without diverting its energy to the digestion of food. Often at such times, the emunctories are clogged and need time to unload.

2. In beginning the treatment of many chronic diseases such as chronic nasal catarrh, bronchitis, syphilis, neurasthenia, rheumatism, and Bright's disease, it will be of decided advantage to limit the amount of food taken for a time. It gives the eliminative organs opportunity to rest with the result of increased efficiency.

3. The practice of eating fruits, nuts, and other foods between meals should be condemned. Normally the digestive organs are methodical and in the habit of doing their work at certain times. Irregularity of feeding disturbs the rhythm and results in fermentation. For persons whose digestion is slow two meals a day are better than more. No food should be taken within three or four hours of the time for retiring. This, of course, does not apply to children or in acute cases requiring nourishment at short intervals.

4. The use of grease in the preparation of foods for the sick should be forbidden. This will rule out such foods as fritters, doughnuts, fried potatoes, fried eggs, grid-dle cakes, fricasseed meats, and various other dietetic abominations which should never enter the human stomach. The gastric juice has no more action upon fats than has water. The digestion of the food prevented by its covering of fat, fermentation easily takes place with the formation of irritating acids.

5. The practice of taking various liquids at meal time to soften the food and wash it into the stomach should be condemned. It not only takes the food into the stomach in a coarse lumpy condition unsuitable for solution and permeation by the gastric juice but the large quantity of fluids renders the gastric juice so dilute that its power of pep-

tonization is very much lessened. In consequence, there is slow digestion, fermentation and the formation of various toxic substances injurious, not only to the stomach, but to the general economy. Patients should be taught by the physicians the value and importance of thorough mastication. He should understand that whatever strength he may have will be derived from the food he eats, and he should see the necessity of eating for strength and health, rather than for pleasure alone.

6. To gain the confidence of the patient and his attendants in the matter of diet with insure obedience to directions and give the physician a great advantage in dealing with disease.

The Value of Knowing the Composition of the Food Used in Feeding Infants.*

By Joseph Graham, M. D., Raleigh, N. C.

I have nothing new to tell you, nor do I claim anything original, but shall only attempt to urge the necessity for analyzing the food used in infant feeding, and to discuss some of the causes for the general inattention to this work by physicians.

A thorough study of the child's nutrition is the first duty of the physician who practices among children. The problem is not simply to save the child's life while it is in our care, but to use those means which will produce a healthy and normal growth so that the organs of the body may progress to normal development instead of impaired structure and deranged function, the effect of which may last even throughout life. The question whether a child shall be strong and vigorous, or a weakling is often decided by its food in the early months. The largest part of the enormous mortality of the first year of life is traceable directly to disorders of nutrition. The child must be fed so as to avoid not only the dangers of acute indigestion and diarrhea, but the more remote ones of chronic intestinal indigestion, rickets, scurvy and tuberculosis.

Good human milk is the ideal food for infants. A careful knowledge of its composition and variations is indispensable, for upon this knowledge are based all of our rules for preparing a substitute food when woman's milk cannot be obtained.

I shall not try to state all the conditions in which an analysis of the mother's or cow's milk would be advantageous, but only a few of them. Personally, I make it a rule to examine the milk that is fed to every infant intrusted to my care.

*Read before the recent meeting of the North Carolina Medical Society at Raleigh.

There are many conditions which affect the composition of the mother's milk and cause disorders of nutrition. Very young women, and those over thirty-five years of age, usually have a deficiency of fat. The number of pregnancies has no special influence upon lactation, except such as result from general poor health.

In the majority of acute illnesses of a slight character and short duration, there is no perceptible effect upon the milk. In septic conditions bacteria may appear in the milk. In my own experience I have never seen any disturbance of lactation from menstruation. The diet of the mother has a very marked influence upon the composition of the milk. The fat and the proteid are very much influenced by diet, the sugar but little. Nitrogenous diet increases both the fat and the proteid. Vegetable diet decreases both the fat and the proteid. An extremely rich diet increases the fat and usually the proteid. All fluids tend to increase the quantity. Alcohol in the form of malted preparations increases the quantity and usually the fat.

The milk of pregnant women is usually small in quantity and poor in fat. Nervous disturbances have a very decided and immediate effect upon the milk. Fatigue, grief, sudden fright and great excitement are likely to affect the secretion in a most marked manner. I have seen sudden temporary suspension of lactation for a day in a healthy mother worried by the serious illness of her child to such an extent that she was hardly able to furnish me the half ounce requested for examination.

I also remember the case of a healthy mother who was giving an abundant supply of good milk. Misfortune came to her in the sudden loss of her husband and eldest child—the infant immediately showed signs of indigestion—the analysis of the milk showed deficient quantity, low fat and high proteid. Mixed feeding was tried and finally weaning had to be resorted to as the infant was bordering on malnutrition.

It frequently happens that a mother is so anxious to nurse her infant that it is several months before it is discovered that lactation is a failure, the child's nutrition disordered, and that artificial feeding must be resorted to. The lives of children are often sacrificed by the futile efforts of a conscientious mother to do what she is physically unable to do. Every physician should be familiar with the symptoms of inadequate nursing, that valuable time be not lost. If artificial feeding is to be employed the difficulties are much less when it is begun early than after the digestion has been deranged by several weeks of very poor nursing. Repeated examinations of the mother's milk should be

made so as to determine whether it is the quantity, or the quality, or both, that is deficient. Also the child should be weighed at least once a week, for no matter what other symptoms are present, the scales are the exact guide by which we must judge our result. An examination of the mother's milk when the nursing infant is not thriving often reveals the fact that the milk is excessively rich. Excessively rich milk is usually found in a healthy woman with large well developed breasts, who leads a sedentary life and enjoys a rich nitrogenous diet. Very often she is taking alcohol in a malted preparation with the idea that her milk is poor, because the child is not thriving. I have seen many such cases. Such a condition is often found in the milk of a wet nurse who changes from the simple life and frugal diet at home to the more luxurious life and diet of the family into which she goes. Examination of the milk shows high sp. gr. and high percentage of cream. With such knowledge as is ascertained by the examination there usually is no necessity to wean the child, certain exceptions. Regulate the woman's life, decrease the nitrogenous diet, stop the alcohol and insist on exercise, and dilute the milk by giving the infant a few spoonfuls of warm boiled water, or barley water, or equal parts of water and lime water before each nursing. The result is usually obtained quickly, the indigestion stops and the baby begins to thrive and gain in weight.

Scanty milk of a poor quality is usually seen in a delicate, anaemic care-worn mother. In this class repeated examination is necessary, for it is by this means that we can determine the chances for improvement by treatment, or decide whether it is best to wean at once. Sometimes the quantity is abundant and the quality is poor. This condition is usually seen in women, who, to improve their milk, have been taking much fluid, often alcohol. In such cases the fat and the sp. gr. are both very low, and it is often best to begin artificial feeding at once. Repeated examination will determine, for this is the only intelligent method in our possession for reaching a decision.

In employing a wet nurse I think repeated examination of her milk should always be made. First to ascertain if the quantity or quality are good and later to correct any variations that may occur.

The time for weaning a child can be intelligently determined only by an examination of the mother's milk and frequent weighing of the infant. We should be guided by this, and not by the child's age. If possible we should wean gradually by substitute feeding. This is usually easily accomplished and without any disturbance

of digestion. Sometimes it is necessary to wean suddenly in acute serious illness of the mother.

A careful examination of the food substitute is very necessary and we should modify the food and try to make it as near as possible to the ideal food—mother's milk. In using an artificial food we should try to get one which contains the same constituents as woman's milk, namely, fat, proteid, sugar, mineral salts and water, and these constituents should be present in about the same proportion as in woman's milk, should, as nearly as possible, resemble those of woman's milk in their chemical composition, and in their behavior to the digestive juices. Cow's milk can be made to comply with these fundamental principles if we first learn its composition by examination, and then modify it by diluting the proteid with water and adding cream and milk sugar to build up the fat and sugar to the proper percentages and lime water to overcome the acidity.

In certain diseases of the intestines and certain nutritional diseases, such as malnutrition, morasmus and rickets, an exact knowledge of the composition of the food given is absolutely necessary for intelligent treatment, for these diseases must be treated by diet and not by medicine, and we can accomplish little unless we analyze the food and understand the results obtained.

In treating constipation in infancy I seldom have to use drugs; analysis of the milk shows the fat deficient. By giving a little cream and fruit juices and using massage, and simple suppositories such as soap, molasses or glycerine, and teaching the intestinal habit as soon as possible, cure is usually accomplished.

In dealing with infantile colic I rarely have to use drugs. This condition is usually due to an excess of proteid in the milk. The immediate attack usually yields to enemata. The mother's milk is examined and if sp. gr. and percentage of cream are found to be high, I reduce the meat in her diet, insist upon exercise and dilute the milk by giving plain boiled water or barley water, or equal parts of water and lime water before each feeding. In the majority of cases no other treatment is necessary.

Of course the exact composition of human milk can be ascertained only by a complete chemical analysis, but there are many variations which can be detected by simple methods of examination. The quantity secreted by the breasts can be estimated by measuring the amount drawn by a breast pump, but this is very inaccurate. The most reliable method is to weigh the child on a pair of accurate scales before and after nursing. Much information as to the quan-

tity of milk can be gained by questioning the mother; if the child constantly nurses a long time, say 20 to 40 minutes, the probability is that the supply is small, and also if at nursing time the breasts are soft and flabby and the milk seems to run in only while the child is at the breast it is certain that the supply is scanty.

In selecting a sample for examination I always have the mother draw all she can with a good breast pump at the regular time for nursing and examine the specimen as soon as possible. The reaction may be taken with ordinary litmus paper. When fresh, the milk should be either neutral or slightly alkaline, never acid. The sp. gr. may be taken by any ordinary hydrometer—I prefer the Holt lactometer, because it is small and only requires half ounce to float the instrument. In taking the sp. gr. the lactometer should be inserted into the cylinder of milk with a whirl, then it will immediately settle to the proper point, and an obscuring of the scale by the adhesion of the milk is avoided. The sp. gr. is from 1028 to 1032, the average is 1031. Fats decrease the sp. gr., but it is increased by all the other solids.

The simplest method for determining the percentage of fat is by the cream gauge. The graduated glass cylinder holding 10 c.c. is filled to the zero mark with freshly drawn milk, the last few drops being added by a pipette so as to bring the top of the column of milk exactly on a level with the line at the zero mark. The cylinder is then stopped and set aside to stand at the temperature of the room for 24 hours when the percentage of cream is read from the scale. The ratio of the percentage of cream to that of fat is as 5 to 3. When I wish an immediate determination of the percentage of fat I use the Leffman-Beam Method which I will speak of later.

The proportion of sugar is so nearly constant that it may be ignored in chemical examination. There is no direct method for determining clinically the amount of the proteid, but if the percentage of sugar and mineral salts is considered to be constant or so nearly so as not to affect the specific gravity, we can get an approximate estimation of the amount of the proteids from a knowledge of the sp. gr. and the percentage of fat—at any rate we can determine whether the proteids are very abundant or scanty. The specific gravity varies directly with the percentage of proteid and inversely with the percentage of fat, that is: high proteid high sp. gr., high fat low sp. gr. The value of this principle will be seen by a study of the table devised by Dr. Holt:

Specific gravity. Cream 24 hours. Proteids.

Average 1031 7 per cent. 1.5 calculated.

Normal

Variations 1028-1029 8-12 per cent. normal rich.

Variations 1032 5.6 per cent. normal, fair.

Abnormal below 1028, high above 10 per cent., slightly below normal.

Variation, above 1028, below 5 per cent., very poor milk.

Variation, above 1032, high per cent. above 10, very rich.

Variation, above 1032, below 5 per cent., nearly normal.

Milk having only a moderate variation from the average, such as sp. gr. 1028 and 4 per cent. cream, or sp. gr. 1033 and 10 per cent. of cream, can be modified by treatment, but if the sp. gr. ranges between 1018 and 1024 and the percentage of cream be only 2 or 3 per cent., it is useless to attempt treatment.

A microscopical examination should always be made. Pus, blood, and epithelial cells and colostrum corpuscles may be detected by the microscope. Pus and blood are always abnormal—colostrum corpuscles are abnormal after the 12th day. I have only had one case in which the colostrum corpuscles reappeared in the milk. The child suffered from an attack of acute intestinal indigestion, and on examination of the milk it was found to be excessively rich in both fat and proteids, and also contained colostrum corpuscles. The mother was induced to give up her sedentary life and rich diet, exercise was insisted upon, and the milk was diluted by giving water and lime water to the infant before each nursing. The colostrum corpuscles disappeared gradually and the excessive richness of the milk was decreased, but it was a long time before the infant recovered and could digest the proteid and fat furnished in her mother's milk continued. Finally, as the colostrum corpuscles returned the child had to be weaned and as its digestion had been so much disturbed, feeding was a most difficult matter. In this case it would have been better to have weaned the child, begun good artificial feeding and avoided the poor maternal nursing. Rotch says that the "colostrum corpuscles should disappear from the mother's milk in a week or ten days after birth. If they continue in the milk into the third week, or return at any time during lactation, they almost invariably cause disturbance of the infant's digestion and become an indication for a temporary suspension of nursing. If they persist for any length of time, the mother's milk is manifestly not suitable for the infant, and a substitute should be provided."

In considering the presence of colostrum corpuscles in the milk it is certainly very in-

teresting to note that these corpuscles do not always appear in the so-called colostrum milk. The colostrum should normally disappear in the first week. When it persists, the infant loses more weight than when it speedily disappears. When its presence is prolonged into the third week the infant does not thrive—in other words, the shorter the colostrum period the smaller the so-called physiological loss of weight in the new born.

In making an examination of cows milk, all we need for clinical purposes is to determine the reaction sp. gr. and the percentage of fat. If the sp. gr. and percentage of fat are known we can modify the milk by adding water to reduce the percent of proteids, and add cream and milk sugar to increase the fat and sugar, and in this way make a formula of any strength desired.

Cows milk is neutral or slightly acid. It should never be strongly acid or alkaline. The reaction is taken with litmus paper. The sp. gr. is taken by the usual method with a hydrometer. The sp. gr. should be from 1028 to 1033. Of course if the cream has been removed it is much higher.

The cream gauge cannot be used for estimating the percentage of fat as in human milk, because the milk has usually been handled two or three times before being tested, and consequently the results are not accurate.

I use the Leffman-Beam method. By this method the fat is brought to the surface by centrifugalizing after destroying the nitrogenous matter with sulphuric acid. This test is very accurate, and the apparatus is not expensive, also it has the advantage that the test can be made in a few minutes. This method requires a centrifuge, special centrifuge tube for milk, and volume pipettes. Five c.c. of the milk to be tested is introduced into the milk tube, one c.c. of the hydrochloric acid solution (h. c. l., 50 volumes, wood alcohol 13 volumes and fusel oil 37 volumes) is added and mixed by lively shaking, sulphuric acid of the sp. gr. of 1.83 is then added drop by drop until the tube is filled to the zero mark. During the addition of the sulphuric acid I hold the tube partly immersed in a glass of water and constantly agitate the contents. This precaution is possibly unnecessary but it lessens the excessive production of heat and avoids any danger of explosion, then centrifugalize for three minutes or until the fats have separated, and read off the percentage of fat from the scale. As the milk-tubes for the centrifuge are graduated to read only to five per cent. when the milk contains more than this amount of fat it should be diluted with its own volume of water examined in the usual way, and the result mul-

tiplied by two. If cream is to be examined for fat, dilute with four volumes of water and multiply the result by five. Examination of milk would be of very little value did we not also know the usual symptoms produced by excess or deficiency of each ingredient. If the amount of sugar is very low, the gain in weight is usually slow. If it is excessive the child is apt to have frequent attacks of colic, with thin green and irritating stools. Excess of sugar is sometimes shown by much eructation of gas from the stomach and regurgitation of small quantities of food.

Excess of fat is usually indicated by vomiting one or two hours after eating, and the regurgitated mass is sour, cheesy, and often greasy. Sometimes excess of fat is shown by frequent bowel actions which are nearly normal in appearance but contain small round white lumps, which resemble caseine, but if composed of fat these lumps are soluble in ether. Too little fat is a constant cause of constipation, and the actions are hard and dry. The most reliable symptom that the proteids are in excess is the presence of curds in the stools, and frequent attacks of colic. If the excess is very great, constipation is often marked.

Imperfect digestion of the food may cause identically the same symptoms as when the various ingredients are present in actual excess. Often the difficulty is, not that the different elements of the food are actually in excess, but that too large a quantity is given at each feeding. The most reliable symptom that the quantity of each feeding is too large is frequent regurgitation of a small quantity a few moments after eating.

We cannot modify the food to meet every temporary symptom of indigestion, but we can correct the chief ones. If the child is not gaining in weight and there are no symptoms of indigestion, gradually increase the proportion of all the ingredients of the food. If the child has frequent attacks of colic and curds in the stools, diminish the amount of the proteids. For frequent regurgitation soon after eating, reduce the quantity of each feeding. For frequent vomiting of sour masses, reduce the fat. For constipation, increase the fat. In a case of indigestion, when an effort is made to ascertain which element of the food is causing the trouble, it is well to remember that the proteids give most trouble to the infant's digestion, the fats next, and the sugar the least.

It is also well to remember that a large quantity of a dilute food is always better digested than a small quantity of a concentrated one. In artificial feeding I believe that the fundamental principle upon which success is founded is to begin with a weak

formula, especially weak in proteids. In case indigestion develops, weaken until you get a foothold, hold it until the conditions are settled, and then increase slowly, for we have to crawl before we can walk. We must weaken the food to suit the strength of the child's digestion, and cannot give what the child's age or our own inclination would call for. Neglect of this principle is, I believe, the chief cause of failure in artificial feeding.

Having made an attempt to discuss the advantages of knowing the composition of the food fed to infants, I shall now try to discuss some of the causes for the general inattention to this work by physicians. Coming into general practice after a short service in a hospital for children I was very much surprised to find how little attention most physicians pay to the infant's diet and nutrition. All physicians pay attention to their prescriptions for infants; why not give equal care to the food. I have given this matter considerable thought, and the conclusion that I have reached is, that physicians in general have an idea that to make an analysis of milk requires a certain amount of special training, expensive apparatus and a great consumption of time. A moment's consideration of the methods I have spoken of will convince you that no special training is necessary and that the time consumed is only a few moments, certainly not more than half hour, even when the microscopic examination is made.

The apparatus is very cheap. The Holt set for breast milk can be purchased of Eimer & Amend, of New York, for two dollars. The centrifuge, and milk-tubes can be procured for about eight dollars, and are a very good investment. A sufficient amount of chemicals for several months work can be bought of any drugstore for fifty cents.

Another cause for the neglect of this work is, the ease with which temporary success is gained by the use of artificial proprietary foods. The best teaching of to-day is to the effect, that this temporary success is often at the expense of the future. I do not care to go into a discussion of the proprietary food. They are often valuable as temporary agents. For instance, the much condemned condensed milk is often very valuable in cases of malnutrition as a temporary food, for in these cases the infant's digestion has much trouble with the fat and the proteid of milk. Condensed milk contains very little proteid and fat; and, as the sugar it contains is usually easily managed, it becomes a very valuable temporary substitute.

I don't believe the desired results in artificial feeding will ever be obtained until we

determine to learn the composition of each food we use; then we will know the ingredients, and can use the food intelligently, modifying it to meet the symptoms of indigestion as they develop. I feel satisfied that this is a better plan than the one we have been following. We have used any number of drugs to meet the various symptoms of indigestion and have gone to the most absurd length in both the quantity and the quality of the drugs that we have administered to babies. We have talked tonics and taught the mother to give medicine to the baby until we ourselves have been responsible for many cases of irritable stomach, weakened digestion and lowered assimilation. Later, as the baby failed to improve we have resorted to over-feeding in place of so much medicine, and here again we have injured the already abused and over-taxed digestion. Let us realize for all time to come that swallowing food, even if it is retained, does not mean assimilation. It is *what the baby digests and assimilates* that does good, not *what it eats*.

We have learned slowly, and at severe cost to the babies, that the sheet anchor in the treatment of the diseases of nutrition must be assimilation, and to secure this we must use less drugs and more care in feeding, carefully avoiding over-working the digestion by either the quality or the quantity of the food we give.

Thoracic Surgery.

Von Mikulicz, in the *British Medical Journal*, mentions the experiments which have been carried out at his instigation in connection with the prevention of pneumothorax. He states that the reason why thoracic surgery has not been able to find a place in modern surgery, like that of abdominal surgery, is that as soon as the pleura is opened the lung collapses and is put out of action. The collapse of one lung is a serious condition, and as a rule the other lung also suffers from the occurrence. The pressure inside the chest is always negative, save during the act of coughing, and may be taken to average -7 mm. of mercury. If both pleuræ are opened the subject dies very soon. This production of pneumothorax is the most serious difficulty in the way of thoracic operations, and even in the operation of suture of the heart is the most frequent cause of failure.

Suerbruch undertook to investigate this subject, and as a result of his labors he reported that he had constructed a sort of pneumatic chamber which admitted of the free opening of the thorax without any danger of collapse of the lungs. The experiments were carried out on dogs for the most part. Inside the chamber a negative pressure was kept up by suction, and in the

case of the dogs it was found that -10 mm. was sufficient. The whole body of the dog was placed in the chamber save its head; around the neck there was a gutta-percha collar which fitted exactly, but which did not compress the dog's neck. The operator and his assistant were also inside the chamber, while the anesthetist remained outside at the dog's head. Thus the dog was breathing air at the ordinary pressure, while as soon as the thorax was opened the external pressure on the lung remained about the same as under natural conditions. As a matter of fact, instead of collapsing the lung protruded somewhat out of the wound. This protrusion, however, was easy to control. The breathing continued spontaneously and without difficulty. Some experiments were also carried out in a chamber having a raised positive pressure in which the dog's head was kept, but this offered many difficulties. In the first place the chamber was small, and the anesthetist had to bear the enclosed vapor of the anesthetic. He became so much affected by the chloroform vapor that after twenty minutes the experiment had to be interrupted. With the negative pressure chamber, in spite of this lowered pressure, the operator and his assistant did not feel any inconvenience even after two hours' stay in the chamber. Should it be found that the conditions of the raised pressure through the respiratory passages offer as satisfactory results as the diminished pressure, several methods are mentioned which might be of value. Suerbruch considers that the diminished pressure has advantages over the reverse order.

The Effect of Diuresis on Albuminuria.

Javal, in the *London Lancet*, says that he has observed that in the case of nephritic patients, the hydration of whose tissues varied very little, the ingestion of an excess of water simply diluted the albumin. Therefore if the amount of albumin was estimated as so much per liter of urine passed it appeared less than before, but in reality the total amount remained the same. In cases of polyuria, if the increase in the volume of urine passed was due to dehydration of the organism, the effect on the albuminuria was by no means the same as when the polyuria was due to the ingestion of a large quantity of water. Therefore in studying the amount of albumin passed by a patient suffering from nephritis it is important to take into account the variations in the total quantity of urine passed and the causes for these variations, for it will easily be seen that the total amount of albumin passed during twenty-four hours gives figures much more trustworthy than a mere estimation expressed in terms of so much per liter of urine passed.

Charlotte Medical Journal

EDWARD C. REGISTER, M. D., Editor.

No. 36 SOUTH TRYON STREET, - - -

- - - - - CHARLOTTE, N. C.

ILLINOIS CONSUMPTION CIRCULAR.

This circular has been prepared by the Illinois Board of Health and is one of the most complete and one of the most intelligently gotten up circulars of the kind that has ever come to this office. It ought to be in the home of every family in the United States and in the office of every physician throughout the country. Every individual should read it. It is condensed, yet its suggestions are convincing and practical. When we come to think of it, it is with a real feeling of sadness when we contemplate the long death roll of the world's greatest men and women, who have succumbed untimely to this disease, which is and has been through countless generations, by far the most potent of all death dealing agencies. This dejection refers to the past. We now deal with a curable disease, and can refer to records of thousands of cured cases to enthuse us.

The Board of Health through this little booklet intended to educate the laity, but it would be well enough for every physician to occasionally study it. The intelligent, the industrious and the sedulous physician every day observes dangerous sanitary and social methods and systems that make no impression upon him. We need to be reminded oftener of the dangers that are about, at all times, to jeopardise the lives of our patrons and the lives of our personal friends, and the lives of those who are still nearer to us. The prevention and cure of pulmonary tuberculosis have received more attention in the last ten years than any other two medical subjects, the large per cent. of cures that we observe has stimulated us to go on with this work. The competent lung specialist everywhere, especially in Western North Carolina, can show records of cures that can hardly seem credible. Thousands of cases are made well and strong in this climate and by these gentlemen, who if not cared for and left at home, would die. We all know that we get infected from the sputum of consumptives, through contaminated dust, and through the use of drinking glasses and through the use of eating utensils and other articles, which have been handled, or put into the mouths of infected people, yet we seemingly at times forget it.

The profession is well enough educated along this line and the most of its members try to do their duty, but many of us may not be as mindful always as we might be, consequently a booklet like this to the medical

profession direct will do good. It is generally believed now, that a tubercular patient, in himself, is almost harmless. He becomes harmful and dangerous through bad management and his own bad habits and carelessness, and I might add ignorance. A tubercular case will not transmit tuberculosis to those with whom he comes in contact, if he takes proper care of himself, and makes the proper distribution of his saliva and sputum, here lies the source of danger—the dried sputum of consumptives. The bacilli in the sputum of pulmonary tubercular cases exist in millions. These may be coughed up and cast upon the sidewalk, the floor, the public halls, on carpets, on handkerchiefs, in dry spittoons, and in fact in every conceivable place to dry and to be blown about and to be inhaled by the healthy and innocent. When there is no spitting by the consumptive, he does not endanger the lives of his companions. When he expectorates and the expectoration is not properly disposed of, he then becomes a dangerous associate and an undesirable companion and imperils the lives of the people of his community.

There is a prevalent belief among consumptives, possibly among some physicians, that the main danger of the carelessness or imprudence, or ignorance of the consumptive himself, is to others and is the only thing to be considered, this is not true, he is a danger to himself, he reinfects himself possibly a dozen times a day by this method of living. His proper discipline and his proper care might eliminate this source of danger to himself and remove one of the main impediments to his recovery. We never know when we are exposed to this kind of infection. We should always be careful and always feel afraid of becoming infected. No one should ever put his finger in his mouth or nose unless it is perfectly clean. If he is infected himself, he may re-infect himself. If he has been handling infected articles he may infect himself for the first time. We should wash our hands before we eat, keep the body clean, exercise in the open air at all seasons of the year. We should walk, horseback ride, practice full inspiration, walk erect and breathe through the nostrils. We should sleep in well ventilated rooms and not even shake hands with consumptives, if we can avoid it, or occupy the same room with them, or the rooms that have been occupied by such patients, unless they have been properly disinfected, for the germs of consumption keep their vitality for weeks and months and years. The germs are less active, less virulent, and in less numbers in dwellings and in work shops and in offices where a plenty of sun and a plenty of fresh air are

allowed to penetrate. They are more active, more prevalent and more dangerous in the dark and damp, filthy and bad ventilated apartments. In courts and dark alleys are fertile places for the development of consumption. To drink out of the same glass or cup, which has been used by a consumptive should never be allowed. It is a bad practice to use a glass that has been used by others unless thoroughly washed. We often observe on our railroad cars the one cup at the water tank that is constantly and as much in use by the tramp and the tobacco user as by the aristocrat and the fine lady and gentleman. This only reminds us of one of our sanitary irregularities. It is the fault of the medical profession that we have never taught our people to be more careful and more sanitary in many of their methods of living,

DECAPSULATION OF THE KIDNEY FOR THE CURE OF BRIGHT'S DISEASE.

The surgical treatment of Bright's disease advocated by Dr. G. W. Edebohls, of New York City, opens up a field in surgery, which heretofore was unknown to this branch of medicine.

These cases being cared for entirely by the physician and all considered hopeless. Dr. Edebohls has performed this operation, in seventy-two cases during the last eleven years. Seven died within two weeks after the operation, twenty-two died at periods more or less remote from operation, and forty-three are known to be living.

The above results seem very encouraging, especially when one realizes the grave prognosis, which has always been given in this class of cases. Out of the forty-three surviving, three the result is unknown, and three are unimproved, twenty improved and seventeen cured. Eleven cases had either chronic interstitial nephritis, or chronic diffuse nephritis of only one kidney, the other being normal.

Nearly all these cases were well advanced and came for operation after all other means had failed to arrest the progress of the disease.

The diagnosis in each case was made clinically and confirmed at the time of operation by obtaining a piece of the kidney substance and examining it microscopically. The contraindications for the operation are albuminuric retinitis and when the compensation of whatever lesion of the heart may be present, is not sufficiently good to warrant the assumption that the patient will safely stand the anesthetic.

Patients over fifty years old do not improve as rapidly as those younger. Nine of the cases reported had albuminuric retinitis and none of these survived.

The operation consists in taking off the entire capsule of the diseased kidney and anchoring it if necessary. The object of removing a capsule is not to relieve tension, because in these cases the kidney is quite soft and not compressed by the capsule. By removing the impervious capsule proper, an opportunity is created for the formation of new vascular connection, between the blood vessels supplying the secretive structures of the kidney on the one hand and the blood vessels of tissues surrounding the kidney on the other.

While the creation of a new blood supply readily explains the continued and lasting improvement in the work of a diseased kidney, after a decapsulation, it fails to explain the immediate beneficial effects. This is probably explained by the massage caused by manipulation, during the operation, thus causing immediate stimulation of the natural blood supply of the kidney supplemented by the relief of congestion by direct abstraction of more or less blood from the organ, thus sufficing for the immediate wants of the kidney and carry it along until its supplementary circulation becomes established.

The new formed blood vessels and increased vascularity of the kidney exists after the operation has been definitely proven by post-mortem examination.

Two cases of puerperal clampsia have been operated upon. The second case illustrated the benefits derived from this procedure best.

The condition of patient at the time of operation.—Mental condition varied between stupid semi-unconsciousness and muttering active delirium. She was totally blind with labored breathing, full soft pulse, temperature slightly above normal, abdomen unusually large. The lower extremities abdominal walls and the back were dropsical in the extreme, while the upper extremities and face were only slightly oedematous. Cervix tightly closed and no indication of beginning labor. During the twenty-four hours only 360 c.c. of urine voided.

Operation consisted of the decapsulation of both kidneys. Forty-eight hours after operation labor set in spontaneously. One child delivered by forceps, second one born alive but only breathed a few times. The patient made an uneventful recovery. Oedema disappearing rapidly and great increase in the amount of urine. Four and a half months after operation mother and child both enjoying excellent health. Patient has nursed the child continuously from its birth. Mother's urine normal, showing no albumin and no casts.

This case proves that renal decapsulation

can arrest the progress of uremia and of puerperal convulsions of renal origin in the undelivered woman. The production of abortion and the induction of labor need not henceforth be the only ultimate resource in the treatment of puerperal clampsia.

THE LEGISLATURE AND THE CARE OF THE CONSUMPTIVES OF THE STATE.

In the presidential address delivered at Raleigh before the last meeting of the North Carolina Medical Society, Dr. H. B. Weaver of Asheville, clearly and concisely stated the present feeling of the medical profession in regard to the care of tubercular patients of the State.

Previous to the discovery of the tubercle bacillus the cause of the disease was unknown, and no definite means of cure and prevention could be systematically worked out. It is to Dr. Robert Koch that we owe the discovery of the germ of tuberculosis, and he it was who first pointed out that it was an infectious communicable disease, caused by a germ. From his demonstrations it therefore follows as a necessary conclusion that it is an absolutely preventable disease.

According to Dr. Weaver, the vital statistics reveal the following facts: There are two million deaths from tuberculosis a year, and out of that number the United States furnishes one hundred and fifty thousand. In North Carolina, South Carolina and Virginia $12\frac{1}{2}$ per cent. of the deaths are due to tuberculosis. In 1900 there were two thousand three hundred and fifty deaths from tuberculosis in North Carolina. Out of this number one thousand eight hundred and fifty occurred in rural districts.

It may be argued that the two prime factors, which enter into the question of increased death rate from tuberculosis is due to the large number of individuals, who come into the State seeking health, and the great mortality among the colored race. The granting of this argument does not eliminate the fact of disseminated tuberculosis with centers of infection in every part of the country.

From the above statistics of North Carolina in 1901, nearly seven persons died each day from tuberculosis. These figures are most appalling when one considers that this disease is absolutely preventable. The main reasons why tuberculosis,—such a preventable disease—remains still the scourge of the human race after twenty years of saving knowledge are threefold. First, the people do not understand the ways in which the disease is spread, and are ignorant of the simple means of its avoidance. Second, many are careless or indifferent as regards sanitary regulations; and third, the facili-

ties for the care of the poor and friendless are entirely inadequate.

That the medical profession is fully aware of the duties and responsibilities in the struggle against tuberculosis is fully conceded. But the medical profession however strong and influential is entirely unable to grapple with this problem, unless they have the support of the people and the administration of the State. They must have generous appropriations from the State for carrying on this work, for medical inspectors and disinfectors, for educational measures, for the establishment of hospitals and sanatoria, for treatment of early stage cases, and comfortable homes for the advanced cases where they can be cared for until the inevitable termination comes.

It is high time then that the whole State medical and laity should wake up to the realization of our true condition in regard to this problem. Fifteen years ago New York City began her crusade against tuberculosis and they have been rewarded by 40% decrease in the mortality of the disease. To be convinced that consumption is a curable disease, one has only to consult the statistics furnished by the large sanatoria. From any of these institutions, which receive patients only in the early stage of the disease, 75% are discharged cured, and in most of the sanatoria in Europe where people in all stages are taken 25% are cured and 50% benefited so that they are able to resume their work.

Several of the States have already taken advanced steps on this subject and have passed laws appropriating money for the erection of suitable sanatoria for the cure and treatment of tuberculous people. Through the concentrated action of the medical profession and the Board of Health of Virginia, the Legislature has passed a resolution inquiring into the "status of the disease, commonly known as consumption and also to report whether or not it is advisable for the State to establish hospitals for the cure and treatment of persons affected with tuberculosis."

The next legislature in that State is expected to enact laws that will create and support sanatoria for this afflicted part of their people.

From the latest data there are at present nine thousand tubercular people in North Carolina, yielding an annual death rate of about three thousand.

Dr. Weaver presented this idea for the consideration of the committee on public policy and legislation and asked them to discuss the proposition—the advisability of presenting through the house of delegates a prayer to the next Legislature of North Carolina for the Governor to appoint a

committee of five members to be composed of two laymen, two medical men and one from the Board of Health, whose duty shall be to report plans, specifications and costs of one or more hospitals, or camps to be erected in the most desirable and healthy climate of the State for the cure and treatment of people affected with tubercular diseases. Basiag calculations on the expenditure of sanatorium institutions in other States, there could be built and equipped hospitals for the accommodation of five hundred patients for two hundred thousand dollars, and for the expense of running such an establishment not over one hundred thousand dollars. These figures dwindle into insignificance when compared to the loss of millions sustained by the State as a direct result from the ravages of this disease.

Dr. Weaver concludes by saying that if every one in his respective sphere and the local and State authorities would do their full duty in the combat of this fearful scourge of mankind, it would be eradicated from our midst and we would have the honor as in other instances of being the first among the States to accomplish this great and glorious work.

The committee on legislation appointed by the State Medical Society ought now to take this matter up and urge the approaching general assembly to act favorably upon the suggestions Dr. Weaver made in his presidential address.

WATER ANESTHESIA FOR THE REMOVAL OF HEMORRHOIDS.

The operation for hemorrhoids has in the past gone through many changes and modifications, from the application of various caustics to the ligature and clamp and cautery operation.

The latter operations require the use of an anesthetic and patient is detained in hospital from ten days to two weeks, bowels being locked with opium. During this time patient suffers usually with considerable pain and discomfort.

Many operators have used cocaine locally and completed the operation without a general anesthetic. The main objection to this procedure is the intense pain after the effects of the cocaine have passed off.

Dr. S. G. Gant of the New York Post Graduate Hospital, while using Sleit solution, which consists of a very minute amount of cocaine and morphine in normal salt solution, found that by diluting this and finally by using ordinary distilled water, that the after pain, so common after using cocaine was entirely overcome.

The operation is performed by placing the patient in the knee-chest posture. The

sphincter is gradually dilated and patient is told to "bear down." By this means the hemorrhoids are brought into view. A large size hypodermic syringe filled with distilled water is then taken and the water injected into the pile until the mucus membrane over the pile becomes blanched. Then an incision is made through the mucus membrane about the base of the pile, ligature applied and the pile cut away. This is the same as the ligature operation under an anesthetic. The clamp and cautery could be used in place of ligature.

The patient is allowed to go on about his work having the parts examined and dressed every other day. They do not complain of any after pain and ligatures soon slough off and parts heal.

During the operation the patient experiences sharp pain when the needle is plunged into the pile, and also a sharp stabbing pain as the pile is being distended with water, but after this experience no pain or discomfort.

This is an operation which can readily be done in the office and save the patient's time and discomfort of the anesthetic.

Distilled water may be used in a similar way for the operation of fissure and fistula, rendering the same good results as when an anesthetic is used.

The external hemorrhoids about the muco-cutaneous border of the bowel being more sensitive on account of their better sensory nerve supply, cause more pain than those of the internal variety.

Review of Southern Medical Literature

New Orleans Medical and Surgical Journal, October, 1904.

Removal of the Lens in High Myopia.—Henry Dickson Bruns advocates this operation in selected cases. In the elderly or middle aged myope, when the pathologic changes are confined to the development of the conus, glasses are usually sufficient and, therefore, operation is not indicated. In traumatic cataract, if carefully done, dissection may be practiced long after the age of thirty, but is usually dangerous after forty, extraction then being the only operation. Dr. Bruns reports five cases under twenty-two years of age operated upon with marked improvement.

The American Practitioner and News, September 15, 1904.

Surgical Treatment of Ulcer of the Stomach and Duodenum.—William H. Watten draws attention to the fact that chronic ulcer of the stomach and duodenum, pyloric retention and obstruction as well as the early stage of cancer are usually diagnosed

chronic dyspepsia, the treatment being based on microscopic and chemic examinations. He considers that this failure to appreciate the organic disease of the stomach which can only be cured by surgical interference leads to chronic invalidism. Five per cent. of all cases dying in hospital have either gastric ulcer or the scar of an old one, two per cent. of all deaths are caused by gastric cancer and forty per cent. of all cancers occur in the stomach; in operations for gastric ulcer Mayo found that forty per cent. had been preceded by ulcer. He considers it proven that gastric and duodenal ulcers are the result of hyperchlorhydria. Surgical interference is indicated in hematemesis, and also in perforation.

Atrophic or Rudimentary Kidney.—Byron Robinson gives the statistics of the occurrence of this rare condition, only about 12 being recorded, also the etiology and diagnosis.

Constipation.—W. T. McKinney advocates diet in constipation as the only treatment. Water should only be taken half hour before meals or two hours after meals and at least half gallon daily. Digestants, if needed, strychnin if motor tone or vascularity is reduced, and to increase secretions, plenty of water and acid after meals, a weak laxative and massage are also recommended. *Nashville Journal of Medicine and Surgery*.

Charles S. and Samuel S. Briggs report the surgical operations at their private surgical infirmary. The writers give short accounts of some sixty-eight operations of great variety with a remarkably low death rate.

Journal of the Mississippi State Medical Association.

Instinct an Important Factor in the Diagnosis and Treatment of Disease.—T. J. Mitchell advocates more attention to the patient's own diagnosis of his case and the satisfaction of his desires or fancies in treatment.

Scabies.—T. C. Hall describes the symptoms of scabies and recommends the removal of a burrow with the lancet and examination under the microscope. He recommends sulphur ointment as a specific.

Obstetrics.—B. L. Culley advocates more attention to obstetrics by the medical practitioner, pointing out that many of the laity are of opinion that any old woman is efficient, if she claims to be a nurse.

An Open Letter to H. S. Guley, M. D.—B. F. Duke advocates more attention to dermatology by the general practitioner.

Enterocolitis.—R. R. Wyatt finds this disease usually attacks children in the second year, most frequently in the hot season,

cause as a rule by fermentation of food in the stomach, improper feeding, bad hygienic surroundings, and nearly always in those children which are not breast fed. The mother considers teething as the cause. He considers that the excuses of mothers to avoid nursing are often flimsy. He advises minute doses of mercury with chalk followed by deodorized tincture of opium $1\frac{1}{2}$ drachms, turpentine half drachm, castor oil 4 drachms, mucilage q. s. ad. 3 ounces, a teaspoonful every four hours, the child to have lime water ad. lib. He then gives 12 grains copperas in three ounces peppermint water in teaspoonful doses three times a day, which he claims is a specific.

Some Neuroses Resulting from Foreign Bodies in the Stomach.—P. R. Brown reports two interesting cases. In the first the patient had symptoms of organic kidney disease and stomach trouble. On washing out the stomach he found masses of thread of all colors, and various other foreign bodies. Lavage of the stomach was kept up for two weeks. The albumin gradually disappeared from the urine and the patient made a complete recovery. The second case was a girl who had what appeared to be an asthmatic, on lavage of the stomach a quantity of the outer portion or hull of prunes was brought away after which the patient recovered. Convulsions in children are often caused by foreign bodies or undigested food in the stomach.

Virginia Medical Semi-Monthly.

Typhlitis-Cecitis-Appendicitis.—Robert I. Preston reviews the history of the treatment of this disease and reports several cases.

Annual License Taxes on Doctors.—Landon B. Edwards advocates the repeal of the law taxing doctors for the practice of their profession in Virginia.

Indications for Bladder Drainage by the Perineal Route.—Oliver C. Smith advocates external urethrotomy for the relief of chronic contraction of the vesicle neck, chronic purulent cystitis, dense and impassable stricture located in the region of the bulb, in case of ruptured urethra, enlarged prostate.

Retained and Adherent Placenta, Technic of Management.—George P. Edwards describes the technic in these cases and advocates rest for an hour or two, the physician keeping his hand lightly on the fundus. If no active movement takes place other methods are described as well as the details of the operation for the removal of adherent placenta.

Nasal Obstruction, Reflex Disturbances Referable Thereto.—O. B. Douglas considers the effects of nasal obstruction, catarrh

so called, as more universally prevalent than any disease which affects the human family. He points out that by continuity of tissue the nose is related to the maxillary, ethmoidal, sphenoidal and frontal sinuses, through the cribriform plate to the brain meninges, by the lachrymal canals to the eyes, by the eustachian tubes to the ears, by the pharynx to the base of the tongue, the larynx trachea and lungs; by the oesophagus to the stomach, by the fauces to the mouth. Diseases causing obstruction and catarrh are exanthematous, diphtheritic, tuberculous, syphilitic, carcinomatous, erysipelatous, and inflammation from irritants inhaled or injected, traumatism and foreign bodies. These produce hyperemia, hyperaesthesia, hypersecretion, obstruction to respiration, coughing, sneezing, pharyngitis, uvulitis, etc. Nine-tenths of all deafness from middle ear disease comes from nasal obstruction causing eustachian stricture. Dr. Jacobi reports case of chorea and Dr. Baruch a case of epilepsy due to nasal trouble.

The Virginia Medical Semi Monthly, September 23, 1904.

Treatment of Typhoid Fever.—Wm. S. Gordon advocates a liquid diet of half pint every three or four hours, the food being varied and all the proximate principles included. As a laxative he uses strained oat meal gruel, while for diarrhoea sweet milk with rice, arrowroot, etc., when excessive, bismuth, chalk mixture, dilute sulphuric acid, etc. He uses intestinal antiseptics, salol, guaiacol carbonate, turpentine, chlorine water, thymol, etc. In tympanites he gives emulsion of asafedida per rectum. As hypnotic he gives bromides, hyoscyne, opium, paraldehyd, etc. He points out certain mistakes in treatment often made, such as too much visiting, too much temperature recording, too little water, disregard of antiseptics in the mouth, nose and pharynx.

Treatment of Malaria.—Robt. M. Street recommends quiniu arsenate gr. 1-16 every two to four hours until ringing in the ears is felt with a calomel and podophyllin purgative followed by liberal doses of sulpho carbonate of lime or soda. If the spleen is enlarged he gives 1-67 to 1-6 grain doses to which may be added arsenate of strychnin 1-134 to 1-30 grain. He also recommends conin in chronic malaria and with jaundice chionan and euonymin 1-6 to 1 grain.

Pain, Its Importance in Health and Disease.—Ramon D. Garcin points out the advantages of pain as a protector of the human system and also the assistance its various forms gives as diagnosis.

Present Status of the Flexible Rectal Tube.—Samuel T. Earle, Jr., points out that owing to Houston's valves it is impos-

sible to pass a long rectal tube any distance into the intestine. He introduced the rectal tube, then carried in over it a Tuttle's proctoscope and found that the rectal tube was coiled upon itself inside the rectum between the first valve and the anal margin. He says that by placing the patient in the knee-chest position or Sims' position with the hips slightly elevated gravity will accomplish more than the rectal tube.

Diseases of Eye, Ear, Nose, and Throat.
Case Notes.—John Dunn reports three interesting cases; in the first though, there was early puncture of the drum, acute mastoiditis followed. Case two, that of a boy aged 8, who had been unconscious for four days with subperiosteal abscess over the mastoid fossa, which discharged after the fourth day from the left ear, the patient becoming suddenly well; on the discharge being stopped the symptoms again appeared; cure followed operation. Case three was that of a child with a large abscess communicating with the antrum.

Gastric Ulcer in Children.—Eldridge G. Cutler points out the rarity of this disease, only 26 cases being reported. He gives the analysis of these cases with the symptoms and treatment.

Male Neurasthenia.—Ephriam Cutter considers colloid catarrh of the urinary tract as one of the causes of male neurasthenia. He divides colloid catarrh into three forms, protoplasmic, filamentous and Indian club. Out of 100 cases of insanity examined, colloid catarrh was found in 80 per cent.

Texas Medical News, September, 1904.

The Prophylaxis of Tuberculosis.—William S. Carter discusses the question giving an account of the various experiments with infection from dried sputum and the dust from cars, hospitals, etc.

Southern Medicine and Surgery.

Some Remarks on the Diagnosis of Typhoid Fever.—Greer Baughman describes in detail the methods of diagnosis of typhoid fever, giving the technique of the Widal reaction and the various mediums for isolating the typhoid from the colon bacillus.

The Old Dominion Journal, September, 1904.

Methods of Purification of Public Water Supplies With Special Reference to the Water of James River at Richmond.—Ernest C. Levy writes a very instructive paper on this very important subject.

Prognosis of Malignant Disease.—B. M. Randolph gives as the result of his experience, when the diagnosis is made early and the treatment prompt, that the prognosis of carcinoma of the breast is favorable, carcinoma of the stomach favorable but less so,

carcinoma of uterus unfavorable, carcinoma of skin favorable, carcinoma of mucous membrane favorable when the Roentgen rays can be directly applied, carcinoma of internal organs unfavorable, sarcoma of extremities favorable, sarcoma of the localities guarded, the only successful results being derived from Colleys' treatment.

Enterocolitis.—I. A. Rucker defines enterocolitis as an inflammatory diarrhoea in which there is a toxic systemic infection with a local inflammatory condition of the intestines. He discusses the etiology, pathology, symptoms, complications, diagnosis and prognosis very fully. For treatment he prefers calomel followed by intestinal antiseptics with colon injections of astringents, especially silver nitrate. He pays special attention to diet.

The American Practitioner and News, September, 1904.

Purulent Inflammation of the Mastoid Process and its Terminations Illustrated With Cases.—Adolph O. Pfingst describes several cases of mastoiditis, pointing out that an individual with pus in his mastoid cells like the individual with pus in his appendix, may recover spontaneously, or there may be a period of quiescence, but in either case the patient is like a man smoking in a powder magazine.

Hydrophobia.—C. A. Edelen draws attention to the long variable period of incubation between two and eight months, the symptoms commence with a feeling of uneasiness, itching and burning of the wound, the cicatrix frequently presents a congested appearance, tender to the touch the pain radiating along the course of the nerves; the patient becomes irritable, restless, melancholic, low spirited, there may be some fever, rapid pulse, harsh husky voice, stiffness of the muscles, swallowing difficult, ann general hyperaesthesia. There may be hallucinations of sight and hearing, the fear of impending death is the most agonizing symptom. The treatment is to send the patient to the Pasteur Institute at once, having first persuaded him that he is sure to recover, the psychic treatment being of great importance.

Massage and Electricity Versus Osteopathy.—John English considers that with electricity massage and the vibrator we are better able to practice osteopathy than the osteopath. He advocates electricity and the vibrator.

The Texas Medical Journal, October, 1904.

Ilio-Colitis; Etiology and Treatment.—E. B. Parsons treats ilio-colitis with a diet of albumin, barley water, etc., at the commencement, followed by brandy and a gra-

dual return to milk diet. He uses calomel in small doses followed by castor oil, followed by bismuth in large doses.

The Alabama Medical Journal, September, 1904.

Mental Abnormalities.—I. F. Searcy, the very well known Superintendent of the State Asylum, writes an essay on mental abnormalities and their classification which should be read by all interested in the subject. The classification appeals especially to the non-specialist and general practitioner from its simplicity and common sense.

Acute Lobar Pneumonia; Some Remarks on its Prevalence, Diagnosis and Treatment.—Cabot Lull points out that the consensus of opinion is that pneumonia is increasing. He summarizes the physical symptoms, laying stress on the location of the pain, 50 per cent. being in the region of the nipple, at the base of the lung about 18 per cent., in the side about 15 per cent., near border of sternum 3 per cent., and a few cases in which it was posterior in the hypochondrium between last rib and iliac crest and lumbar region. His treatment begins with a calomel purge, a daily bath of cold or tepid water as preferred, cold water to drink in abundance, liquid diet. Ice cap to the head and one to the chest for pain with morphin or mustard paste or dovers powder. A cotton jacket made of non-absorbent cotton or wadding sewed in cheese cloth and covered with oil silk or muslin for the trunk. For the cough codein or morphin, alcohol, strychnia, digitalis and normal saline solution are recommended as stimulants.

The Maryland Medical Journal, October, 1904.

Remarks on the Etiology and Treatment of Diabetes Mellitus.—Thomas B. Fletcher, Associate Professor of Medicine at the Johns Hopkins University, completes an article on the subject of diabetes mellitus. He reviews the physiology of carbohydrate metabolism and the different pathologic conditions which are known to cause the elimination of sugar by the kidneys. The article should be read in the original as it contains a synopsis of the present state of our knowledge of this disease. He gives a short resume of the treatment as practiced at the Johns Hopkins Hospital.

Disinfections for Diphtheria and Scarlet Fever in Baltimore With an Account of Reinfections.—Wilbur P. Shubbs, inspector of throats for the Baltimore City Health Department, gives the statistics of the results of the work of his department during 1903 showing very creditable results and a large amount of work done.

The Alabama Medical Journal, October, 1904.

Thoughts on Typhoid Fever.—R. C. Bankston, M. D., Birmingham, Ala., states the various pathological conditions peculiar to typhoid. He also explains the necessity of a careful painstaking diagnosis made only by a thorough examination of the patient. In regard to treatment he recommends the usual drugs used in the expectant plan of treatment, warning one against the use of too strong purgatives, causing hemorrhage and exhaustion. Uses sponge baths of alcohol and water, does not use sweet milk but prefers meat juice and albumin water flavored with pineapple juice. Strongly advises the use of salt and weak alum irrigations, especially in hemorrhage and internally advocates the use of adrenaline chloride.

Turpentine is regarded as a direct heart and glandular stimulant and antiseptic and is used throughout the course of the disease. He concludes by saying: "Practically the only good I have observed from internal medication in an uncomplicated case has been from agents directed toward removal of bacilli and soothing irritable mucus membrane. I believe that future typhoid treatment will be based upon early diagnosis and prevention of ulceration of agminated glands by thorough irrigation of the infected area with some non-irritating antiseptic which would reliably kill bacilli, removing the causing factor and yet not injuring mucus membrane. Such course would cut short the time and severity of the disease and eliminate dangerous features. Make it a fixed rule to give nothing which could depress or check excretion of waste or elimination of toxic products, or lock up morbid matter in the tissues. Give nothing which would irritate and further excite the hygienic condition of the alimentary canal. Give nothing which would tend to limit oxidation or impair haemogenic conditions. Give nothing which could impair brain function or force continuing centers. Simply help and augment the powers of resistance and continuance till time can limit the onslaught and resolution end the attack."

Enemas in the Treatment of Fevers.—Hugh Boyd, M. D., Scottsboro, Ala., points out the value of cold enemas in typhoid and pneumonia causing a lowering of temperature and stimulating the excretion of waste products, both by the bowel and kidney; also the use of warm enemas in intermittent malarial fever, shortening the febrile stage and hastening the sweating stage. The cold enemas are not in any way considered as substitutes for cold sponging, but to be used as stimulants, evacuating,

antipyretics and diuretics at the discretion of the attending physician.

The Louisville Monthly Journal.

Rickets.—Galvin Dalton, M. D., Louisville, Ky., discusses the early signs of rickets common in all classes of people due to improper food and hygiene, and lays special stress on laryngismus stridulus. Treatment recommended is improvement in hygienic conditions, proper diet, and the administration of 1-200 to 1-150 of phosphorus three times a day as first recommended by Kasowitz, of Vienna.

New Orleans Medical and Surgical Journal, November, 1904.

A paper read before the Louisiana State Medical Society by E. H. Hummel, M. D., Jackson, La., entitled "A Case of Circular Insanity With Consideration of Periodicity of the Emotional States in Its Casual Relation of the Phenomena of This Psychoses," is published in this issue.

The paper read before the Louisiana State Medical Society by H. E. Menage, M. D., of New Orleans, entitled "Pruritus Considered from a General Standpoint," includes the different forces of general pruritus and their causes and treatment; also the local forces of pruritus. In the treatment of local pruritus the application of equal parts of carbolic acid, menthol, camphor and chloral is recommended among other things. When other measures fail strong galvanic current is recommended and in the cases of general pruritus when other measures fail the electric bath with smasoidal current is recommended.

Virginia Medical Semi-Monthly, October 21, 1904.

The Attitude of Physician and Patient to the Science and Art of Medicine.—Wm. S. Gordon, M. D., Richmond, Va.

Headaches From Eye Strain.—Clifton McMiller, M. D., says that 75 per cent. of periodic and recurrent headaches are due to some strain upon the eye for the purpose of maintaining better vision.

The conditions of the eye which cause headache are in order of frequency far sight with astigmatism. Astigmatism alone and far sight alone, and to these is added insufficient strength of some of the motor muscles of the eye, and the endeavor on the part of these muscles to keep the eye in a state of parallelism. It is usually the patients with a small error of refraction that suffer with headache because the vision is kept good by a constant effort of the accommodation apparatus and this constant effort prevents physiological rest that the eye should obtain in looking at distant objects. This type of headache is not constant or

typical, probably most often frontal. The general condition of patient must be taken into account. The eye must not be looked upon as the only cause of the headache.

Book Notices.

Diseases of the Nose, Throat and Ear, and their Accessory Cavities. By Seth Scott Bishop, M.D., D.C.L., LL.D., Author of *The Ear and Its Diseases*; Honorary President of the Faculty and Professor of Diseases of the Nose, Throat and Ear in the Illinois Medical College; Professor in the Chicago Post-Graduate Medical School and Hospital; Surgeon to the Post-Graduate Hospital and to the Illinois Hospital; Consulting Surgeon to the Mary Thompson Hospital, to the Illinois Masonic Orphans' Home, and to the Silver Cross Hospital of Joliet, etc. Third edition, thoroughly revised, rearranged and enlarged. Illustrated with 94 colored lithographs and 430 additional illustrations. 564 pages, royal octavo. Price, extra cloth, \$4.00 net; sheep or half-Russia, \$5.00 net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia.

This work is designed, first, to help students in preparing for their degree; second, for those progressive practitioners who wish to acquire the proficiency necessary to properly treat those patients who are unable to visit specialists; and, third, for those who are gradually exchanging their general practice for special work in these branches. The subjects are simplified and condensed in order that the work may be used as a ready reference in daily practice. In the present edition a new chapter has been added and many new articles and illustrations inserted. As a result of this addition and revision, Dr. Bishop's work is thoroughly representative of the most advanced knowledge of the subjects with which it deals,

Light Energy; Its Physics, Physiological Action, and Therapeutic Applications. By Margaret A. Cleaves, M. D., Fellow of the New York Academy of Medicine; Fellow of the American Electrotherapeutic Association, etc., with numerous illustrations in the text and a frontispiece in colors. New York: Rebman Company, London, Agents: Rebman, Limited, 1904. Pp. xiv-827.

The author gives in this most excellent work a complete review of the subject of light as applied to the treatment of disease. He goes over in a very thorough manner the practical side of the subject, as well as the theoretical. The volume will serve as a guide to the intelligent application of phototherapy. The book does not specially deal

with the subject of X-ray, but describes fully the sun bath, the concentrated sun light, the electric arc bath, the incandescent light bath, the Finsen light, the rays from radium, and the x-rays. The illustrations that the book contains are mostly of apparatus for the therapeutic application of these forms of light.

The book is published in a very attractive form, and the reviewer regards it as a very valuable work.

Hare's Practical Therapeutics. A Text-Book of Practical Therapeutics; With Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With special chapters by Drs. G. E. de Schweinitz, Edward Martin and Barton C. Hirst. New (10th) edition, much enlarged, thoroughly revised and largely re-written. Octavo, 908 pages, with 113 engravings and 4 full-page colored plates. Cloth, \$4.00, net; leather, \$5.00, net; half morocco, \$5.50, net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1904.

This, the most convenient, comprehensive, trustworthy and by far the most widely used work on Therapeutics ever published, requires no introduction to the medical profession or the student world. The demand which has necessitated in a little more than a decade, ten editions and three times as many printings is readily understood upon an examination of the volume.

Every new edition means a complete revision, which in the present issue has been so thorough that the entire work has been reset in new type.

Every discovery of worth, every really useful new remedy or method of treatment is clearly set down with telling illustrations wherever needed. Hare's Practical Therapeutics has come to be synonymous with up-to-date knowledge of treatment, medicinal or otherwise.

The ingenious arrangement of the volume having proved so popular has not been changed, and although the new matter and new illustrations have resulted in a considerable enlargement of the volume the certainty of a still wider usage has enabled the publishers to issue it without increase of price.

Physician's Pocket Account Book. By Dr. J. J. Taylor, of Philadelphia. Published by the Medical Council, 4105 Walnut St., Philadelphia, Pa.

This book is designed as a physician's complete financial record, embodying the

utmost degree of simplicity, plainness and economy of space and time. It has the following unique features. It is the only single book system on the market. No posting to a ledger required, as each account is originally made in ledger form, there being plenty of room to write the name and address of the party responsible for the account, and also the person or persons to whom each service is rendered, and to describe the exact service, with columns for charges and credits. It enables the doctor to prove his account in court against a debtor who disputes it. It enables the doctor to collect his account from a decedent's estate. It will enable the doctor's widow to collect from his debtor after his death. The sign system of the visiting list is utterly valueless for all these purposes, and hence frequent great losses. They can simply serve as memoranda for the physician for the purpose of refreshing his memory, if needed, but can not be introduced in court as evidence. Thousands of dollars are lost every year by physicians and their estates on this account. The book is excellently arranged and it gives us pleasure to recommend it.

The Flame-Gatherers. By Margaret Horton Potter. The McMillan Company, New York. \$1.50.

Miss Potter lays the scene of her story in India, in the Middle Ages, and in a prelude promises that it shall answer the riddle of "the master knot of human fate." It is a story of intense love, jealousy, combat, death and lethal philosophy. Whether it fulfills the promise of the prelude—perhaps on that point the opinion of readers will differ. It is a very interesting book. It is beautifully bound and contains 417 pages.

Manassas, A Novel of the War. By Upton Sinclair. The McMillan Company, New York. \$1.50.

Mr. Sinclair's work is not so much a novel of the great Civil War, in the ordinary acceptance, as a story that presents a vivid picture, full of details, of the condition of things in our country previously to the war and the events, opinions, theories, prejudices and passions that led up to it and paused it. The nominal hero is a young man born in the South, who is taken by his father to Boston, to live and be educated. He takes with him all his Southern conceptions of State Sovereignty and Southern ideas. In conversations with a professor and others he gradually changes his opinion and the folly of secession. The author is thoroughly conversant with the minutest particulars of the great struggle that began with Calhoun's doctrine, which burst into actual war at Fort Sumter, and was ended at Appomattox; and he faithfully delineates

"the very age and body of the time." The hero's education develops him into a lover and champion of the Union, and at the close of the story he is fighting, in brave excitement, as a private in the National Army at Bull Run or Manassas—hence the title of the book. The struggle around the Henry House in that battle is made intensely realistic.

Mechanical Vibration and Its Therapeutic Application. By M. L. H. Arnold Snow, M. D., Professor of Mechanical Vibration Therapy in the New York School of Physical Therapeutics; Associate Editor of the Journal of Advanced Therapeutics; Late Assistant in Electro Therapeutics and Diseases of the Nervous System in the New York Post-Graduate Medical School, etc. Published by the Scientific Authors' Publishing Co. New York. 1904.

For centuries the basis of mechanical vibratory treatment has been developing. Manner, form, length, and localization of treatment have received consideration and gradually a scientific system of manual massage has been evolved in accord with pathological conditions and physical laws. Although a laborious method and liable to be performed in a perfunctory way, except by the conscientious masseur, it has attained a high place in therapeutics. During the past few years machines have been perfected, which have made the application of the principles of scientific massage less laborious and more complete in point of time, intensity and frequency. The question whether the degree of delicacy associated with the touch is sacrificed, in some cases is one that the future must determine. There is unquestionably an extensive field for its therapeutic application, for which the spinal stimulation and inhibition constitute but a small part. The subject not having been treated from a broad point of view, this work is to call attention to the fundamental principles, which will enhance the therapeutic application in the important field which will be open to it in the future.

The book is nicely bound and contains 300 pages with a complete index and a great many illustrations.

The Medical News Visiting List. 1905. Thirty Patients Per Week. Philadelphia and New York: Lea Brothers & Company.

This little account book is invaluable, made in pocket size and is well shaped suitable for the physician to carry. It contains memoranda and data important for every physician, and ruled blanks for recording every detail of practice. It is the nineteenth year of issue, and embodies the

results of a long experience and study, which has brought it to a state of development which is almost perfect. It is issued in four styles to meet the requirements of every practitioner. Weekly: dated for 30 patients. Monthly: undated for 120 patients per month. Perpetual: undated for 30 patients weekly per year. Sixty patients: undated for 60 patients weekly per year. The weekly, monthly and 30-patient perpetual contains 32 pages of data and 160 pages of classified blanks. The 60-patient perpetual consists of 256 pages of blanks alone. Each in one wallet-shaped book, bound in flexible leather, with flap and pocket, pencil and rubber, and calendar for two years, \$1.25. Thumb letter index, 25 cents extra. By mail, postpaid, to any address.

The text portion of the Medical News Visiting List for 1905 has been thoroughly revised and brought up to date. It contains among other valuable things a scheme of dentition, tables of weights and measures and comparative scales, instructions for examining the urine, value of eruptive fevers, incompatibles, poisons and antidotes, directions for effecting artificial respiration, extensive table of doses, an alphabetical table of diseases and their remedies and directions for ligation and arteries. The record portion contains ruled blanks of various kinds adapted for noting of all details of practice and professional business. Printed on fine tough paper, suitable for either pen or pencil.

Portfolio of Dermochromes. By Professor Jacobi, of Freiburg, in Breisgau. English Adaptation of Text by J. J. Pringle, M.B., F. R. C. P., Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. New York, Rebman Company, 10 West 23d Street, Corner 5th Avenue. London Agents: Rebman, Limited, 129 Shaftesbury Avenue, Cambridge Circus. London, W. C. 1903.

The process of the production of the illustrations in this most excellent work is that known as Citochromy, and is the invention of Dr. Albert of Munich. The reproduction of colors by this process is believed to be more perfect than by any other hitherto in use, and is obtained almost entirely by mechanical means apart from manual work. The great majority of the illustrations are taken from models in the Breslau Clinic, executed by Herr Kroner, and are reproduced by permission of Professor Neisser, to whom the inception of the work is mainly due, and to whom it is dedicated by his former student and assistant, Professor Jacobi. Models were also furnished by

Professor C. Lassar of Berlin, and Bayet, of Brussels and Henning of Vienna. The object of the Atlas is not to illustrate the rarer forms of skin disease, but to furnish to medical men, teachers and students a handy and comprehensive series of illustrations of the skin affections most frequently met with in practice, in their various phases and at a reasonable price. The author does not attempt to give a book sufficient to supplement the systematic treatises on diseases of the skin, for the text here given has been condensed to the greatest possible degree, without however, omitting any of the essential facts.

The book is in two large volumes. Volume one contains seventy-eight illustrations and volume two contains seventy-nine illustrations. These illustrations are beautiful and enable the reader to fully appreciate the text.

Qualitative Analysis Brief. By Allard Memminger, M. D., Professor of Chemistry, Hygiene, and Clinical Urinary Diagnosis in the Medical College of the State of South Carolina; of General and Applied Chemistry in the College of Pharmacy of South Carolina, and Member of State National and International Medical, Pharmacal and Scientific Societies, Active and Honorary, Etc. Second edition, revised and rewritten. P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia. 1904. Price \$1.00.

In the second edition of this work the author has added matter that did not appear in the former. These additions will prove very valuable to the work. He has strictly adhered to the plan adopted in the former edition, and though variations may at times be noted in the separations, the same concise plan of treatment has been observed. The student will find in it a quick and ready method for determining the elements, with which he most commonly meets in the practice of his profession, when single or combined. The book contains 124 pages.

The Physician's Visiting List. (Lindsay & Blakiston's) for 1905. Fifty-fourth year of its publication. The Dose-table herein has been revised in accordance with the new U. S. Pharmacopœia (1900) Philadelphia: P. Blakiston's Son & Co. (successors to Lindsay & Blakiston) 1012 Walnut Street. Sold by all booksellers and druggists. Price \$1.00.

This pocket account book is well known to the profession. It is neatly gotten up and strongly bound in leather. It contains a calendar table of signs and three pages devoted to incompatibility. Nearly every physician needs something like this to con-

stantly refer to when prescribing. There are a great many more mistakes made along this line than we suppose. It devotes one page to the immediate treatment of poisoning. This chapter is compact, well arranged, and is something that the doctor should constantly keep before him. It also contains a chapter of metric or French decimal system of weights and measures. A chapter or table for converting apothecaries' weights and measures into grains. A dose table, giving the doses in both English and metric systems to correspond with the U. S. P. A chapter is incorporated on the Asphyxia and Apnoea, and table comparisons of thermometers.

Elements of General Radio-Therapy for Practitioners. By Dr. Leopold Freund, Vienna. Translated by G. H. Lancashire, M.D. Brux., M. R. C. S. Eng., L. R. C. P. Lond., Assistant Physician to the Manchester and Salford Hospital for Skin Diseases. With one hundred and seven illustrations in the text and one frontispiece. New York. Rebman Co., 10 West 23rd Street, Corner 5th Avenue. London Agents: Rebman, Limited, 129 Shaftesbury Ave., London, W. C. 1904. Dr. Lancashire in the translation of Dr.

Freund's work has accomplished something that will be of great value to the profession of this country. He has performed his work admirably. The author is already well known in this country, but possibly it is not generally familiar to all medical men, that to him, perhaps, more than any other, we owe the foundation of Roentgen-Therapy. He has in his book clearly brought out the essential features of this recent form of treatment. He had before him a task not only of describing in a comprehensible manner the technique, the indications for and results to be expected from the various radio-therapeutic methods, but also of tabulating and arranging the fundamental laws these nature-forces obey, thereby more fully explaining their physiological effects.

This book is based upon six years of arduous theoretical and practical work in all the branches of radio-therapy treatment. The writer has not limited himself, however, in the preparation of this work to the description merely of his own investigations and conclusions, but has quoted from authors who have written on the subject, controlling wherever possible his deductions by the authors own experiment. Where it seemed advisable for the further comprehension and investigation of the subject the older physical and photo-chemical works have been quoted. He purposely, he says, presupposed that the reader would have but little knowledge of physics. He has in-

cluded the most recent ideas, drawing from the knowledge obtained from his own practice up to the present time, and refers the reader to the various sources, which are full of information on the separate subjects. He does not claim for the work that it has thoroughly exhausted the subject, but it seems to be in the reviewer's opinion very complete. It is a truism that, however complete an observer's knowledge may seem to be, in course of time fresher facts partly contradict his earlier conclusions.

In looking over this book it requires but a brief glance to show the enormous amount of work, which a large number of investigators have accomplished, and the great progress which has been made in a few years with the question of radio-therapy. Such zeal, such intense interest as the most talented and able chemists, physicists and medical men of every country have shown in attacking these most difficult problems, remain almost without parallel. Although this branch of science can hardly be said to be more than in its infancy. Gaps in our knowledge are being filled and the rubbish is being removed. We have already achieved brilliant theoretical and practical results, leading one to hope that radio-therapy will obtain an acknowledged place among our methods of treatment. One need only refer to the undeniable and astonishing results achieved in the department of skin diseases, which have so markedly attracted the attention of dermatologists.

The book contains 538 pages and is nicely bound and completely indexed. Those who are interested in this subject could not do better than add this volume to their library.

Surgical Emergencies. The Surgery of the Abdomen, Part I. Appendicitis and Other Diseases About the Appendix. By Bayard Holmes, B.S., M.D., Professor of Surgery in the University of Illinois; Professor of Clinical Surgery in the American Medical Missionary College, Chicago; Attending Surgeon the Chicago Baptist Hospital. New York: D. Appleton & Co. 1904.

This book contains the author's experience as corrected by the experience of other operators in this most interesting and unique branch of surgery. This little retrogressive organ, the appendix, is responsible for an unusual death-rate among young and vigorous adults, and it breeds for others a series of nutritional and nervous disorders, which makes it worthy the consideration of every practicing physician. The author says it is impossible to contemplate the catastrophies incident to appendicitis without immediately viewing every abdomen, from which the appendix has not been moved,

which contain magazines which may be set off at any moment. Many pages in the book are devoted to the histories of unfavorable cases. The author has wisely incorporated these cases to keep future operators from making the same mistakes that have been made. In a few instances the modern scientific nomenclature has been substituted for the mediæval medical style. The most important innovation in this direction and the only one that needs mention, relates to the direction of the axes of the body. The words front and back are laid aside, and ventral and dorsal are used in their places. The adverbs derived from these adjectives are ventrad and dorsad, meaning in a ventral direction and in a dorsal direction. Above and below are not employed in the sense of toward the head and toward the foot, but cephalic and caudal are used in their places, and the adverbs derived from these adjectives are cephalad and caudad. The author says that it is difficult for the physician, or the surgeon, to review any case in the same perspective. The practicing physician is apt to be hopeful in his prognosis, no matter how grave the symptoms may be, or however inexplicable the symptoms may appear. The consulting physician is apt to overlook the great law of probability in the immensity of possibilities, which might explain the clinical picture in any difficult or serious case. He has in mind so many difficult pathologic rarities which have given rise to errors in diagnosis, that he dwells upon remote scientific illustration, until the positive findings, or a protracted clinical observation reveals the true character of the disease. The surgeon is apt to dwell upon the probabilities of the case; he overlooks the rarities and the possibilities of their confuting his diagnosis. He fears the destructive effects, or the insurmountable catastrophies of delay. He hastens with a relative diagnosis to undertake the positive relief of the most probable condition rather than face the dangers of a delay sufficient to establish a positive diagnosis. The book is paper bound with several illustrations.

Hand-Book of the Anatomy and Diseases of the Eye and Ear. For Students and Practitioners. By D. B. St. John Roosa, M. D., LL.D., Professor of the Diseases of the Eye and Ear in the New York Post-Graduate Medical School; Formerly President of the New York Academy of Medicine, etc., and A. Edward Davis, A.M., M. D., Professor of the Diseases of the Eye in the New York Post-Graduate Medical School; Fellow of the New York Academy of Medicine. 300 pages, square, 12mo. Price, extra cloth, \$1.00,

net. F. A. Davis Company, Publishers, 1914-16 Cherry St., Philadelphia, Pa.

While this little book does not contain a large number of pages, it exhibits the present state of ophthalmology and otology in sufficient proportions, even if abbreviated, to make an exact and reliable guide as to the principles of treatment of the diseases of the eye and ear and to the anatomy of these organs. The little book will be an excellent guide for under-graduates and post-graduates, who need a guide to refer to, to corroborate and amplify what they hear and see in clinics. It will prove a valuable reference book to the busy practitioner, and will be found very useful to this class of the medical profession. The author has taken great pains, to include the well-established views of the nature and treatment of ophthalmic and aural diseases, also those that are on trial. Those that have been abandoned have received scanty attention. A very full and complete index has been added and facilitates quick reference.

The Practical Medicine Series of Year Books, comprising Ten Volumes of the Year's Progress in Medicine and Surgery. Issued Monthly. Under the General Editorial Charge of Gustavus P. Head, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School; Volume VIII; *Materia Medica and Therapeutics, Preventative Medicine, Climatology, Suggestive Therapeutics, Forensic Medicine.* Edited by George F. Butler, Ph.G., M.D., Henry B. Favill, A.B., M.D., Norman Bridge, A.M., M.D., Daniel R. Brower, M.D., Harold H. Moyer, M. D. July, 1904: The Year Book Publishers, 40 Dearborn Street, Chicago. Price, \$1.00.

In reviewing the literature of the last year one is struck with the amount of commendable work in therapeutics, especially what you might term as physical therapeutics, and of these more particularly the very interesting topics of x-rays and radium. This branch of therapeutics has grown in the past few months to occupy a place, in journalism at least, that all but obliterates the other methods of non-surgical diseases. The value of these physical methods is, indeed, becoming more apparent as their nature is better understood. There is a growing tendency to avoid drug treatment, when any other means may be employed, and it is not surprising that these physical agents should claim a greater share of attention, at this time. A great many conservative minds are expressing their opinion regarding the true value of this branch of therapeutics, and it will soon find its real place in medicine after the zealous ardor of the more or

less skilled enthusiasts have somewhat abated.

According to this volume serotherapy continues to furnish interesting study for workers in this line, but nothing of especial value has been discovered in the last year. The usual number of proprietary preparations and combinations have been brought out, and although no particularly valuable remedy has been perfected, the general training of the pharmaceutical productions has been along original lines, as proven by laboratory and clinical experience. In this volume as in the previous ones, it has been the aim to present only the valuable material that has been published during the year, together with the really commendable work that has been done in the line of Therapeutics and *Materia Medica*; and of these to present a sufficient abstract to enable the reader to obtain a practical working basis without being obliged to refer to the original articles. We believe this feature to be one that will be appreciated by the general practitioner. This volume has 344 pages and is bound in its usual style, which is cloth.

Quiz-Compend? A Compend of Medical Latin. Designed Expressly for Elementary Training of Medical Students. By W. T. St. Clair, A. M., Professor of the Latin Language and Literature in the Male High School of Louisville, Kentucky; Author of "Cæsar for Beginners," "Notes to Cæsar's Gallic War, Book Three," etc. Second Edition, Revised. P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia. 1904. Price, \$1.00.

The author's aim in publishing this little book is to present to the student of medicine in a plain practical way the fundamental principles upon which the medical language is built. The student who comes to the study of medicine with little or no knowledge of Latin, its technical language, will find in this little book a patient and careful helpmate to guide him safely through the perplexing mazes of the special terms and phrases used in medicine—medical Latin. A limited vocabulary of the medical words is learned lesson by lesson in this little book. A careful explanation is made of the special technical endings, their formation, meaning and use. These are illustrated by numerous examples, and are firmly fixed in the student's mind by the repeated drill and reference. Upon these words, phrases and sentences are formed which the student reads and writes. The imperative, subjunctive and gerundive form used in prescriptions, dictations, etc., are thoroughly given, and so presented that no student will fail to master the method of

using all such terms. Prescriptions are given in the complete Latin, also in abbreviations and in symbols. A large number of abbreviations and derivations are given. The book contains 140 pages and is nicely bound. The book should be in every medical student's library.

The Blues (Splanchnic Neurasthenia) Causes and Cure. By Albert Abrams, A.M., M.D., (Heidelberg) F. R. M. S., Consulting Physician, Dever National Hospital for Consumptives, the Mount Zion and the French Hospitals, San Francisco; President of the Emmanuel Sisterhood Polyclinic; Formerly Professor of Pathology and Director of the Medical Clinic, Copper Medical College, San Francisco. Illustrated. Price, \$1.50. New York: E. B. Treat & Co., 241-243 West 3rd Street. 1904.

The object of this volume is to direct attention to the new and heretofore undescribed variety of nerve exhaustion, which the author designates as Splanchnic Neurasthenia. The author says that this special form of nerve weakness is characterized by paroxysms of depression of varying duration, and which are specified popularly as "the blues." The recognition of this special form of neurasthenia is of more than theoretic interest and our ability to cope with this condition and offer to the sufferer, not only amelioration, but relief, is a decided advance over our former ideas and methods. When properly understood there is no variety of neurasthenia, which is more amenable to treatment than the splanchnic form. In all literature prior to this only short references have been made to this form of neurasthenia. This subject seemingly has been ignored, and the appearance of this work, complete as it seems to be, is timely. A perusal of the volume will show that the author believes that the origin of this form of neurasthenia is due to congestive intra-abdominal veins. The book altogether is a very interesting little volume. It is completely indexed and is beautifully bound in cloth and has 240 pages.

Hygienic Examination of Flour and Bread.

Drombrowsky (*Archiv für Hygiene*) says that in bread dough, lactic acid is absent, acetic acid present in quantities of 50.8 per cent, lactic acid 25.3 per cent, acid phosphates 22.5 per cent. The addition of yeast to the dough causes an increase in the acidity due to the action of the organism. The most prolific acid producers do not belong to the colon group. He determined that flours showed an acidity as follows: Rye, 0.30 to 0.52 per cent; wheat, 0.23 to 0.4 per cent. These estimations were made on the dry substance.

Miscellaneous.

An Object Accomplished.

When, in June, 1897, the publisher of this journal assumed the responsibility to publish the transactions of the Medical Society of the State of Pennsylvania in journal form, he had in view the accomplishment of two special objects, namely, to prove that it could be done without the aid of the quack medicine advertisers, and also to show that the transactions of a state society published in journal form were of much greater value to such an organization than when issued in book form. As this latter was an experiment among state medical societies, it was looked upon with considerable misgivings by many members, but the results accomplished by the Medical Society of the State of Pennsylvania under this arrangement, and its adoption by some ten or twelve other state societies, also apparently with good results, proves the wisdom of the plan of publishing the transactions in monthly installments. We claim for the Medical Society of the State of Pennsylvania the position of pioneer in establishing the merits of this plan.

With regard to the advertisements, we feel that the most ethical member need blush at nothing that has appeared in this journal, and it should not be forgotten that it was not for lack of opportunity that unethical advertisements were not abundantly represented.

The publication of a medical journal, and especially one representing the transactions of a great medical society, should be as free from commercialism as is the daily life of a physician actuated by the highest motives of humanity, and no one will deny that to encourage the use of unethical remedies tends to injure the sick and afflicted rather than to benefit them, and the only advantage, therefore, that can accrue is represented by the monetary consideration.

Working for results believed to be of great benefit to both the profession and the public, the publisher has found much pleasure in his labor, but other responsibilities devolving upon him render it imperative that this work shall be carried on by other hands, and with this issue, therefore, the active participation in the publication of the transactions by the present publisher will come to an end.—Dr. Koenig, in the Pennsylvania Medical Journal.

Just at this season of the year we are especially called upon to consider the advantages to be found in Glyco-Thymoline for the treatment of acute catarrhal diseases of the nose and throat.

Coryza, naso-pharyngitis, tonsilitis and

laryngitis are now most common. After exposure to cold or damp chill the mucous membrane, with its delicate cell structure and fine capillary network, takes on a turbid appearance. The minute blood vessels or capillaries become congested and their function practically suspended. The blood cells through lack of nourishment die and are thrown off. The glandular secretions are altered; instead of excreting a bland, non-irritating mucus, we have present an acid discharge most irritating in type. This is about the condition we find in all catarrhal inflammations.

How does Glyco-Thymoline apply here? What are the special advantages?

When applied warm in a 25 per cent. solution, Glyco-Thymoline gives a soothing sensation to the inflamed membrane, due to its anaesthetic or anodyne properties.

Glyco-Thymoline quickly dissolves all accumulations of thick, ropy mucus, crust formations, etc.

Glyco-Thymoline in a 25 per cent. solution, being approximately of the same alkalinity and specific gravity as blood serum, causes by its exosmotic action (the passage outwardly through the tissues of normal secretions and products of inflammation), a rapid depletion of the engorged tissue, thus aiding nature after her own manner in restoring capillary circulation, normal glandular action and fostering cell nourishment which soon brings about a general normal condition to the membrane.

An Experience With Peptenzyme.

"I have recently had occasion to prescribe Peptenzyme in a case of vomiting of pregnancy in a woman, age 35, a primipara. She suffered intensely from nausea immediately after eating, having been unable to retain scarcely any food for nearly three weeks. Various digestive compositions were employed without the least benefit, some even seeming to aggravate the trouble. I put her on Peptenzyme, two tablets after each meal. I never saw a drug act so promptly nor so uniformly as has Peptenzyme. I do not believe there is another agent of its class on the market that approaches it in therapeutic value. I have also used the remedy in gastric catarrh and atonic dyspepsia with absolutely positive results. It does not wear out like many of the so-called digestive compounds, especially some of the stuff on the market that is sold to physicians at 25 cents per ounce and which is composed principally of sugar of milk and other cheap agents to add bulk with just sufficient pepsin to give them the characteristic smell. My advice to the profession is to use Peptenzyme whenever and wherever such an agent is indicated. In the

vomiting of pregnancy it is sometimes best to give one tablet one-half hour before eating and one immediately afterwards. In indigestion where there is malnutrition and consequently tissue waste without repair, pepsinase will act in a most agreeable and satisfactory manner. When given to the habitual drinker after a "booze" it will assist in correcting the gastric trouble and enfeebled nerve condition that almost robs him of a conscious individuality.—Abstract from the Medical Council.

Uric acid troubles are specially important at this season. Physicians who have experimented with nauseous and complicated remedies are often disappointed with results and find that their patients have serious stomach troubles in addition to the original complaint. The safest and best remedy is Buffalo Lithia Water. Thousands of physicians in the country have, for a great many years, used it successfully for Uric Acid Gout, Rheumatism and similar troubles.

Dr. J. Allison Hodges, of Richmond, says that it is vastly superior to lithia tablets and other preparations.

Prof. John V. Shoemaker, M. D., of Philadelphia, says it is doubly efficient in Rheumatism and Gout, dissolving Uric Acid and Phosphatic Sediments.

Dr. Thomas P. Mathews, of Manchester, Va., says it is a wonderfully important remedy.

Prof. Alfred L. Loomis, of New York, says: "I have used it with marked benefits." Address, for particulars, Proprietor, Buffalo Lithia Springs, Virginia.

Acid Intoxication.

Acid intoxication of the blood, so often responsible for obscure symptoms—and not infrequently death, particularly after operation—is a prolific cause of defective metabolism as a result of acid fermentation in the intestinal tract, due to a cessation in the proper functioning of the liver and its normal discharge of bile into the intestine.

Physiologists have long since pointed out the importance of bile in the intestinal tract. By animal experimentation they have shown that, if the common bile duct be ligated and a biliary fistula established, thereby drawing all the bile from the gall bladder, the animals waste away and perish after a few weeks from inanition, though they continue to take food in normal quantity in the interval.

Hence the superlative influence of the function of the liver to the human economy, which, unfortunately, is too often disregarded. The presence of bile in the intestinal tract in normal quantity is essential for health. If the liver be not active enough to discharge it normally into the intestine,

it must accumulate in the gall bladder, or be absorbed into the circulation. In either or both cases the inevitable result is irritation wherever the bile is deposited throughout the body. Since the whole system is oftentimes deranged from saturation with bile and endeavors to eliminate it through the kidneys and skin, its presence in the urine can always be detected by proper test.

The usual symptoms of the derangement described are *intestinal distention*, both gastric and intestinal indigestion, headache, backache, frequently muscular pains, and disturbances of the circulation, vertigo, syncope, etc. Even more alarming symptoms are not at all unusual and should serve as a warning of some serious condition and, if unrecognized or neglected, corresponding catastrophe.

The habit of taking an occasional cathartic, or so-called "liver stimulant," such as calomel, podophyllin, or the effervescing salines, which act only by irritating the duodenum and, at best, provoke merely a temporary discharge of bile from the gall bladder, is a grave error, for the reason that the irritation produced may cause tumefaction and subsequent obstruction of the bile duct, thus accentuating, rather than improving, an already bad enough condition.

What will really prove of positive value in such cases as these—and what alone should be given—is a *true* hepatic stimulant that will positively increase the secretion of the hepatic cells and discharge fresh bile into the intestine, thus flushing and freeing the bile duct, counteracting acid fermentation and eliminating toxic products resulting from defective digestion.

Such a remedy has been found in Sulpho-Lythin, a true hepatic stimulant and eliminant. It stimulates increased secretion of the hepatic cells and discharges fresh bile into the intestine, acting through the medium of the portal circulation after being absorbed from the upper intestinal tract. It does not produce irritation or other injurious effects, even when given continuously in maximum doses. It is peculiarly characteristic as an antifermentive and, in counteracting fermentation, is aided by the bile it liberates in the intestine. The bile also exerts a cathartic action and thus eliminates toxins.

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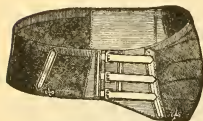
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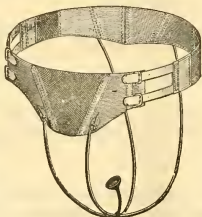
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The Advertisements in the Journal of the American Medical Association.

The following editorial appeared in the August number of the California State Journal of Medicine, published by the Medical Society of the State of California, and edited by Dr. Philip Mills Jones. (Here follows the editorial from the August Journal on the trustees of the A. M. A. and their conduct of the A. M. A. Journal.)

It is generally admitted by practically all members of the medical profession having average ethical sense that the advertising pages of the Journal of the American Medical Association, the representative and foremost medical journal of America, are a discredit to the organization, of which it is the official organ, and the arraignment by Dr. Jones is legitimate sequence to the course so long pursued by the trustees. May the journal of the Medical Society of the State of Pennsylvania never merit such an arraignment as this.—Pennsylvania Medical Journal.

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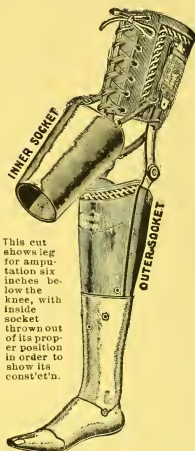
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Under the head of "Therapeutics," the Medical Examiner, contains the following by Walter M. Fleming, A. M., M. D.* regarding this valuable combination: "Its effect on the respiratory organs is not at all depressing, but primarily it is bracing, instead of depressing and followed by lassitude. It is not inclined to affect the bowels by producing constipation, which is one of the prominent effects of an opiate, and it is without the unpleasant sequels which characterize the use of morphine. It neither stupefies nor depresses the patient, but yields all the mild anodyne results without any of the toxic or objectionable phases.

When there is a persistent cough, a constant "hacking," a "tickling" or irritable membrane, accompanied with dyspnoea and a tenacious mucous, the treatment indicated, has no superior. In my experience I found one "Antikamnia and Heroin Tablet" every two or three hours, for an adult, to be the most desirable average dose. For night-coughs, superficial or deep-seated, one tablet on retiring, if allowed to dissolve in the mouth will relieve promptly, and insure a good night's rest. In short, it will be found futile to delve for a more prompt and efficient remedy than "antikamnia and heroin tablets" in all bronchial complications with laryngeal irritation, dyspnoea, asthma, winter-cough and general irritability of the thoracic viscera."

* Qualified Examiner in Nervous and Mental Diseases for Supreme Court, New York City.

Dr. Mann Page, of Warm Springs, Va., Graduate Med. Dept. University of Virginia, 1897, writing, says: "I have used Sanmetto in almost every case of kidney trouble that has come to me during the past year, and the results obtained in all cases from the "temporary congestion" so often accompanying "cold," etc., to the acute and chronic cases of "true inflammation" have been most gratifying. I am now using Sanmetto in several cases of albuminuria accompanying pregnancy, with benefit to every one of the patients. In cases of irritability of the bladder, from the least degree of this class to the most acute cases of inflammation, following the abusive use of abortifacients, Sanmetto stands alone as a speedy and safe remedy. The success of Sanmetto in the relief of the depressing sequelæ familiar to all who witness the unfortunate results of the 'three days home-gonorrhœa-cure' is great. The relief of pain and amelioration of alarming symptoms inspires confidence in the grateful heart of these victims of contagion."

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It's a wonderful laboratory, this human body. But it can't prevent the formation of deadly poisons within its very being.

Indeed, the alimentary tract may be regarded as one great laboratory for the manufacture of dangerous substances. "Biliousness" is a forcible illustration of the formation and the absorption of poisons, due largely to an excessive proteid diet. The nervous symptoms of the dyspeptic are often but the physiological demonstrations of putrefactive alkaloids.

Appreciating the importance of the command, "Keep the Bowels Open," particularly in the colds, so easily taken at this time of the year, coryza, influenza and allied conditions, Dr. L. P. Hammond of Rome, Ga., recommends "Laxative Antikamnia and Quinine Tablets," the laxative dose of which is two tablets, every two or three hours, as indicated. When a cathartic is desired, administer the tablets as directed and follow with a saline draught the next morning, before breakfast. This will hasten peristaltic action and assist in removing, at once, the accumulated fecal matter

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The Modern Treatment of Neurasthenia.

Of all the affections of the nervous system that are unaccompanied by gross organic changes there are few which tax the therapeutic ingenuity of the practitioner to such an extent as neurasthenia. This disease is essentially a disorder of function produced as a direct consequence of the exhaustion of the nerve-centres. The recuperative power of the nervous tissue is abnormally slow, and there is an increased excitability to all external stimuli. The wear and tear of modern life and the keen competition which exists in every profession and calling leave their mark indelibly upon the strongest constitution.

By some, a "nervous breakdown" is considered as a sort of hall-mark of a fine organization, while neurasthenia is classed with appendicitis as quite a fashionable modern malady.

Be this as it may, the disease is a real one to the sufferer, and it is certainly not a psychosis. Its pathology is indefinite, but there are already evidences that by means of more perfect technique, some lesions are discoverable. Dr. C. Y. Hodge (*Journal of Morphology*, Vol. V, No. 11) has called attention to various changes which take place in the histology of the nerve-cell during functional activity. In the neurasthenic, an actual physiological bankruptcy occurs for the time being after due expenditure of nerve-energy. The reserve of nervous force is speedily drawn upon and soon becomes played out.

The role of phosphorus in the structure and composition of the nerve-cell is universally acknowledged to be considerable, though it is difficult to gauge it with mathematical exactitude. The destination of the organic phosphates in the food is chiefly towards nervous protoplasm, as distinct from the inorganic phosphates which are more especially concerned in the elaboration of osseous tissue. As regards the non-utilization of phosphorus in neurasthenia we may well compare the condition with anaemia in which there is a similar non-utilization of iron.

A certain amount of recuperation takes place in all living tissues when they are fatigued and worn out provided they are placed under favorable circumstances and given time for process. But in neurasthenia this power of recovery is much diminished, so that the nerve-cells are unable to assimilate the necessary phosphatic element needed to preserve their functional integrity.

The Weir Mitchell treatment has become quite a by-word in the treatment of this troublesome and sometimes apparently hopeless affection. Forced feeding, and absolute rest, physical and mental, often

work wonders in a comparatively short time. But, valuable as hygienic and digestive measures are, they are deprived of much of their efficacy unless a nerve-tonic, or rather a nerve-food, be administered at the same time.

This is just where the utility of the glycerophosphates is most obvious, because it has been shown by Bardet and others that the action of these salts, particularly when in a mildly acid form, is powerfully stimulating to the tissues and, moreover, they are capable of being readily absorbed by nervous protoplasm.

It should be noted that the ordinary glycerophosphates of commerce are unstable and therefore unreliable salts. Their solutions in glycerine in a slightly acid medium, according to the formula of Huxley, retain permanently the therapeutic properties of these remedies.

The aims of the modern drug-treatment have ever been to supply, where possible, to the tissues those elements in which they are lacking, and the chief obstacle in the way has been the inability of the laboratory to successfully imitate these constituents with anything approaching accuracy. The size and complexity of the organic molecules of living matter appear to be an insuperable barrier in the way, but it would seem as if the nearest approach to the composition of the nerve-substance, with its contained lecithine has been found in the acid glycerophosphates.

The small amount of strychnine contained in the syrup is also a valuable aid in the regeneration of the nerve-cell and in restoring its function.—Dr. G. W. Tobias, New York.

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Before and after operation, Sulpho-Lythin is specially valuable because it restores and preserves normal functional activity of the liver, bowels, kidneys and skin; it also prevents or removes intestinal fermentation and distention, the *bête noir* of the surgeon, and thus places the patient in the best possible condition to withstand the shock of operation and recuperate therefrom.

To obtain the best results, Sulpho-Lythin should be administered, as a rule, for one, two or three weeks prior to operation, the method of administration being varied to accord with the individual necessities of every case. After operation, it should be commenced as soon as it can be borne by the stomach—usually after twenty-four hours—and continued as required during convalescence to maintain the normal activity of the liver and intestinal tract.

When Sulpho-Lythin is properly administered, no other cathartic is required, either before or after operation and in both cases the condition of the patient will improve daily under its exhibition. Where the intestines have been exposed, as in intra-abdominal operations, an occasional salt enema to aid evacuation may be required after operation and strychnia also may be advantageously administered in such cases.



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Urotropin, Methylene Citric Acid, and Urotropin Methylene Citrate (Helmitol or New Urotropin).

Prof. Arthur Nicolaier (Deutsches Archiv f. klin. Medicin, Vol. 81, 1904) records his very exhaustive studies of these drugs. It is an established fact that Urotropin, introduced by him nine years ago, is a most efficient remedy, the number of original papers thereon exceeding 200. This literature confirms all the assertions he made in 1895—that Urotropin in $7\frac{1}{2}$ grain doses dissolved in half pint of water, given twice or thrice daily, is harmless and therapeutically effective; that soon after its administration it appears unchanged in the urine; that the urine, without losing its acidity, acquires uric acid solvent properties and an inhibitory action on micro-organic growth; and that there is often a diuresis.

It is used with good effect in uric acid concretions and in gout. But the most brilliant results are seen in bacterial diseases of the urinary passages, in cystitis, pyelitis, pyelonephritis, and in posterior urethritis. It lessens the pain and dysuria, eliminates the pus from the excretion and, if it is ammoniacal, removes the alkalinity and restores its acid reaction. It is ineffective only in tuberculosis of the urinary tract; and even here it is occasionally useful to combat mixed infection. Urotropin is generally effective in a short time; not infrequently all symptoms disappear permanently or do so when the remedy is resumed and persisted in for prolonged periods. Its efficacy is not dependent on a special urinary reaction; it acts equally well whether the urine is acid, alkaline or neutral. The very first case which I recorded was one of a very severe cystitis with ammoniacal urine.

Urotropin is indicated in all urinary infections, in bacteriuria, especially that of typhoid fever, which occurs in about 25 per cent. of all typhoid cases, usually after the third or fourth week. Urotropin $7\frac{1}{2}$ grains t. i. d. generally removes it in a week.

As a prophylactic before and after instrumentation large daily doses up to 60 grains, should be given. Of course this is too much for steady use. Lately it has been recommended as a preventive of nephritis in scarlatina, and finally it is successful in certain cases of phosphaturia.

Occasionally there occurs a bacterial affection of the urinary tract of non-tubercular nature in which we do not get the desired effect from Urotropin. This is in no way due to the reaction of the urine; the the recalcitrant cases may be acid, neutral or alkaline. Attempts have been made to find a preparation which is effectual even in these cases. While the sedative effect of the drug on the inflamed mucosæ is un-

doubtedly an important factor, its therapeutic action is chiefly dependent on the formaldehyd separation that occurs, and hence the endeavor has been to find a combination from which even greater amounts of formaldehyd would be separated.

In 1901 I experimented with the methylenecitrate of Urotropin, which has been introduced under the names of "Helmitol" and "new-Urotropin." My first tests were made with methylene citric acid alone. Animal experiments showed that after its ingestion no free or loosely combined formaldehyd is present in the urine, and that it did contain some albumin. In a healthy man 1 gram four times daily occasioned severe diarrhoea, and in another 4 grams caused a papulo-vesicular eczema of the skin and cheek. Even with the latter dose, urines infected with micro-organisms and kept at a temperature of 98.6 deg. F., became turbid in two days from abundant bacterial growth. Methylene citrate acid, therefore, is decidedly inferior to Urotropin. The same objection holds good for the sodium salt of methylene citric acid, Citarin.

As to the methylene citric acid salt of Urotropin (Helmitol), which contains 40.7 per cent. Urotropin, the usual daily dose is 45 to 60 grains, corresponding in Urotropin content to $22\frac{1}{2}$ grains Urotropin. Larger doses of Helmitol give unpleasant by-effects, such as meteorism and diarrhoea, as Heuss, Mueller, Seifert, Fisch and von Zellenburg have reported; these are doubtless due to the contained methylene citric acid. Urotropin in doses of $7\frac{1}{2}$ grains t. i. d., dissolved in a tumblerful of water, never causes such untoward actions. The use of large doses of Helmitol for prolonged periods is impossible because of dysuria, vesicle burning and irritation. Bering has observed renal irritation (albuminuria); Goldberg states that, in contradistinction to Urotropin, 45 to 60 grains daily caused hematuria in two out of 10 cases.

Like Urotropin, Helmitol does not affect the acidity of the urine. Both drugs simply hinder the growth of the micro-organisms of ammoniacal fermentation, and hence the normal acid reaction reappears. After the exhibition of sufficiently large doses of Helmitol, free or loosely combined formaldehyd is present in the urine. Since this is not the case after the ingestion of methylene citric acid alone, the question is whether this effect is not due to the 40.7 per cent. Urotropin which Helmitol contains.

Mueller made some comparative tests of Urotropin and Helmitol, from which he concludes that the latter has a greater antibacterial power; but he made the fundamental error of sterilizing his Urotropin and Helmitol solutions by heat ere he added

A New Self-Retaining Abdominal Retractor.

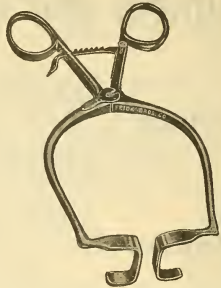
A few points of its superiority over Single Retractors :

**Stays Still,
Opens Wound Widely,
Manipulated With One Hand,
Liberates Both Hands of Assistant.**

PRICE, - - - - - \$10.00

FEICK BROS. COMPANY.

Manufacturers Surgical Instruments.
Pittsburg, Pa.

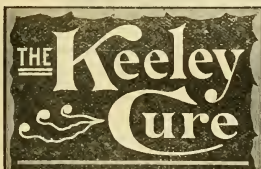


Freckles. Should be used in connection with Acne Tablets No. 49. Samples for trial and literature submitted upon application.

Contains: Zinc Sozo-Iodolate, Zinc Oxide, Resorcin-Eucalyptol, Ethyl Carbanilate, Oil Pinus Pumilio, Gallanol, Oil Rose and Lanoline.

An elegant and effective ointment for the complexion. Cures Acne, Pimples, Blackheads; removes Sunburn and

CHICAGO PHARMACAL CO., 141 Kinzie Street, Chicago, Ill.



For Liquor and Drug Using

A scientific remedy which has been skillfully and successfully administered by medical specialists for the past 25 years.

AT THE FOLLOWING KEELEY INSTITUTES:

Birmingham, Ala.	Washington, D. C.	Lexington, Mass.	White Plains, N. Y.	Pittsburg, Pa.
Hot Springs, Ark.	211 N. Capitol St.	Grand Rapids, Mich.	Columbus, O.	4246 Fifth Ave.
Los Angeles, Cal.	Dwight, Ill.	St. Louis, Mo.	Dennison Ave.	Providence, R. I.
San Francisco, Cal.	Marion, Ind.	2803 Locust St.	Portland, Ore.	Richmond, Va.
1170 Market St.	Des Moines, Ia.	Boulder, Mont.	Philadelphia, Pa.	Seattle, Wash.
West Haven, Conn.	Crab Orchard, Ky.	North Conway, N. H.	812 N. Broad, St.	Waukesha, Wis.
Atlanta, Ga.	Portland, Me.	Buffalo, N. Y.	Harrisburg, Pa.	Toronto, Ont.

them to the nutrient media. I have shown that Urotropin solutions split off formaldehyd when exposed to a high temperature: and this is far more so the case with Helmitol solutions of equal strengths; for aqueous solutions of it react strongly acid while those of Urotropin are feebly alkaline. The Helmitol solutions which Mueller added to the nutrient media contained 34 times as much formaldehyd as did the Urotropin solutions; and this vitiates his experiments. Bruck made very extensive comparative investigations of the two drugs and concludes "that Urotropin methylene citrate (Helmitol) is no more powerful than Urotropin; its effect is dependent on the variety of bacteria and the amount of bacteria in the

urine in exactly the same way, and that in very purulent urine it is decidedly weak." Clinical trials prove that in doses which are the co-efficient of the usual Urotropin doses, i. e., which are $2\frac{1}{2}$ times as great as the latter, Helmitol is effective in exactly the same diseases in which Urotropin is effective and is ineffective in exactly the same cases in which Urotropin is ineffective.

To conclude: (1) Both in bacteriological and in animal experiment as well as in clinical tests methylene citric acid proved to be absolutely inert and to cause certain untoward actions. (2) Urotropin methylene citrate (Helmitol) has been shown, both bacteriologically and clinically, to be dependent for its therapeutic efficacy upon its

Antigia and Antigia Combinations

ANTIGIA POWDERED.

A Safe and Powerful analgesic that can be used with confidence by itself, or in combination with other drugs, such as Salol, Heroin, Salicylate Soda, Iodide Potash, etc.

Antigia

Antigia

ANTIGIA TABLETS.

Each tablet contains five grains of **Antigia**, and in this form it is most accurate and convenient for general uses.

ANTIGIA AND CODEINE TABLETS.

Antigia $4\frac{1}{2}$ gr., Phosphate Codeine $\frac{1}{2}$ gr. This combination will be found a most valuable one where Phosphate Codeine is needed in combination with a Powerful analgesic.

Relieves

Reduces

ANTIGIA AND QUININE TABLETS.

Antigia $2\frac{1}{2}$ gr., Sulph. Quinine $2\frac{1}{2}$ gr. The therapeutic action of Quinine is so well understood that the practical uses of its combination with a known Antipyretic are apparent at once.

Pain.

Fever

ANTIGIA AND HEROIN TABLETS.

Each tablet contains **Antigia** 5 grs., Heroin 1-16 gr. An elegant form in which to administer Heroin, thereby getting the combined properties of an expectorant with a safe Anodyne.

Samples sent to the Profession upon receipt of request.

POWERS-TAYLOR DRUG COMPANY,
Richmond, Virginia.

Urotropin contents. (3) By reason of the contained methylene citric acid, Helmitol may cause unpleasant by-effects. (4) As the dose of Helmitol is based on its Urotropin contents of 40.7 per cent., the dosage is more than twice as great and consequently more than doubly as expensive.

The Swing of the Pendulum.

Motion is one of the fundamental laws of the universe; nature seems to abhor rest. We seldom see anything remain for long perfectly quiet and unchanging. And so, largely, it is with human nature; we either progress or retrogress; we do not, for long, remain in *statu quo*. Things, conditions, movements, what you ask, take to themselves small beginnings and slowly grow; we become aware of them, but are tolerant; they increase, and we notice them; they wax great, and if they are evils, we bear with them; they wax greater and become more pestiferous evils, and then comes a reaction. We no longer tolerate them with a shrug of the shoulder; we no longer writhe impotently; we no longer exclaim, "But what can we do?"—we get up and exhibit the law of nature—motion. Such a cycle has been, since a time when the memory of man runneth not to the contrary,

likened to the swing of the pendulum. Has the nostrum evil within the medical profession reached its limit, and is the reaction about to set in? These are grave questions, but from the letters that come to us from all over the country, from almost every state in the union, commending the Journal for its outspoken attitude and praising the society for having the courage of its convictions and for pointing out rottenness where it exists, we are led to hope that a change may possibly occur. For years every right-thinking man in the country has known that the advertising pages of the *Journal of the A. M. A.* were worse than rotten; yet no one cared to speak the first entergetic word. Your society has done so, however, and the ball has started rolling. Note the result: The *Journal of the A. M. A.* has adopted, in slight measure, our rule in regard to printing the formula of a proprietary medicine with the advertisement. They do not make any acknowledgment for the suggestion, and we do not ask it; we only ask that it be done. If it can be done in three or four instances it can be done in each and every case. Do not falter, you gentlemen of the trustees; keep at the good work. Take as your instructions from the Association that portion of its Principles of

THE URINARY ANTISEPTIC

Uriseptin

Makes alkaline urine acid.
 Clears turbid urine by killing bacteria.
 Liberates formaldehyde slowly in the kidneys.
 Makes the urine antiseptic.
 Keeps the urinary tract aseptic.

THAT'S THE WHOLE STORY

THEFORE INDICATED IN

**Cystitis, Pyelitis, Nephritis, Prostatitis, Uremia,
 Calculus, Gout, Bacteriuria, Pneumonia
 and in Rheumatism**

DOSE—One to two teaspoonsfuls four times a day in plenty of water.

Full Information furnished physicians on request, or 8-oz. bottle will be sent on receipt of 25 cents.

GARDNER-BARADA CHEMICAL COMPANY

42 RIVER STREET,

CHICAGO, U. S. A.

Medical Batteries AT WHOLESALE PRICES

ELEGANT WALL CABINET for Direct, Alternating Current or Cells. Gives Galvanic, Faradic and Sinusoidal Current, Caustery and Light.

VIBRO MASSAGE MACHINES, with Electric Battery. Best in the world.

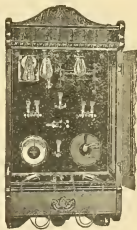
MARBLE GALVANIC and FARADIC WALL PLATE, only \$18.00.

FARADIC BATTERIES from \$3.75 up.
 GALVANIC and CAUTERY BATTERIES from \$8.00 up.

SEND FOR OUR WHOLESALE PRICE LIST OF
 STATIC MACHINES SURGICAL INSTRUMENTS
 X RAY MACHINES ELECTRODES
 OPERATING CHAIRS TRUSSES
 NEBULIZERS SUPPORTERS

MONEY BACK IF YOU ARE NOT SATISFIED
Western Surgical Instrument House

SALESROOM 69-71 DEARBORN ST CHICAGO, ILL.
 FACTORY 69TH AND WALLACE STS



WARNING! The Medical profession is warned against purchasing Instruments represented as Huston's, but without the Huston stamp. The cheap imitation of our goods are all disappointing. The genuine Huston Instruments all have our name stamped on them. They should be purchased from us direct.

Catalogs describing new Surgical Inventions mailed free upon request. We carry absolutely everything used by physicians, guarantee all our goods, and invariably make right prices. Correspondence solicited.

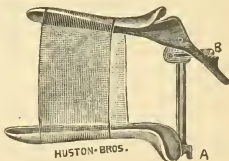
HUSTON'S NEW SPECULUM. Simple, aseptic, strong self-retaining. Has many advantages over the ordinary Speculum. Manipulated by strong ratchet. No screw, no projecting handles to obstruct. Rubber band excludes vaginal folds (see illustration) and permits perfect cervical view. Unsurpassed for applying large tampons.

The Huston New Speculum has no equal for Multiparas and where there is much patulosity. Price, \$3.00.

HUSTON BROTHERS COMPANY,

35 to 37 B Randolph Street,

CHICAGO.





"QUINOLIV."

Is a Palatable Powder of Pure Sulphate Quinine, with Olive Oil as a Disguisant.

Used and recommended by eminent practitioners because it has proven *Reliable!*

Quinoliv acts gently upon the system, produces no nausea, no ringing noises in the head, and no depression by its continued use.

Patients take it readily and in larger doses without knowing it to be quinine.

Valuable for delicate and irritable stomachs, and it is as perfect a quinine as chemistry can produce.

Samples and Literature upon Application.

Made only by

D. F. DAVENPORT, Americus, Ga.

Trade Supplied by the Leading Wholesale Druggists.

Ethics which says that "It is equally derogatory to professional character for physicians to dispense or promote the use of secret remedies." And please remember that a mere qualitative formula, such as that you are printing with the advertisement of Mey's poultice, will not answer; the physician should know *how much of what* he is using.—California State Journal of Medicine.

Proprietaries.

During the meeting of the American Medical Association held at Atlantic City last June, representatives of the State Medical journals conceived and promulgated the idea that mutual interests would be better served, a bond of sympathy and good will created between themselves, and the profession at large benefitted by an association termed "The American Association of State Medical Journals."

One of their number whose bump of wisdom was more normally developed than that of some of those present, succeeded in having final action on the project deferred until the meeting of the A. M. A. at Portland, Ore., next year.

The points of special interest in their declaration of principles are, (1) No journal of this association shall accept an advertisement of a medicine which is not ethical, and "ethical" shall mean that the product ad-

vertised must have published with it not only the names of its constituent parts, but also the amount of such constituents, so that a definite dosage can be determined. Further, such product must not be advertised in the secular press, to the laity. (2) If a product is marketed under a copyrighted name, the manufacturer shall furnish with it the proper chemical name, and if not patented, then also the process of manufacture.

(3) All advertisements not covered by the above paragraphs, or which contain extravagant or improbable claims, shall be submitted to the executive committee for approval before they can be accepted.

If the representatives had any desire or wish for anything further they did not express it, and it is fair to presume that they do not want anything more. Were an excessive or inordinate desire for gain present they might have demanded a share of stock in each company who patronized them or levied on a portion of their patrons' receipts,—pabulum for the "kitty" as it were, but as nothing of this sort was done, they cannot be accused of having had the slightest mercenary or other improper motives when their declaration of principles was formulated.

If they are ever put into actual operation the "bond of sympathy" ought to be ordert

LISTERINE

A non-toxic antiseptic of known and definite power, prepared in a form convenient for immediate use, of ready dilution, slightly, pleasant, and sufficiently powerful for all purposes of asepsis. These are advantages which Listerine embodies.

Listerine Dermatic Soap

(FOR USE IN THE ANTISEPTIC TREATMENT OF DISEASES OF THE SKIN)

Listerine "Dermatic" Soap contains the essential antiseptic constituents of thyme, eucalyptus, mentha and gaultheria, which enter into the composition of Listerine. The quality of excellence of the soap-stock which serves as the vehicle for this medication, will be readily apparent when used upon the most delicate skin, and upon the scalp.

Listerine "Dermatic" Soap contains no animal fats, and none but the very best vegetable oils enter into its composition; in its preparation unusual care is exercised, and as the antiseptic constituents of Listerine are incorporated with the Soap after it has received its surplus of unsaponified emollient oil, they retain their peculiar antiseptic virtues and fragrance.

A sample of Listerine Dermatic Soap may be had upon application to the manufacturers—

**Lambert Pharmacal Co., St. Louis,
U. S. A.**

Be assured of genuine Listerine by purchasing an original package.

ed exceptionally strong, as it is not difficult to foresee that the demands made upon it will be unusually heavy.

There is probably no question but that State medical journals, at least the more influential ones, can be conducted without a loss, without a page of advertising matter, as members of the State associations are in a measure morally bound to pay their subscriptions, if, in fact, the State association does not set aside a dollar or two from the annual dues of the members as a reserve for the expenses of their official organs, but the question of profit had better not be discussed.

It is also true that many independent medical journals could be issued regularly from month to month from the amounts received from subscribers, but it is safe to assume that medical editors and publishers "live not by glory," and do, undoubtedly, depend upon the commercial side for their maintenance and profit, to a considerable extent.

Notwithstanding the enormous circulation of some of the great daily papers of our large cities, but a small proportion of the excellent service we all enjoy is due to the amount received from subscriptions, and were it not for the general advertiser, the modern newspaper, with its foreign news department as completely served as its domestic, its elegant press work and fine illustrations, brilliant and lucid editorials written by men whose salaries run into five figures, would dwindle to a mere job sheet, more despised than read.

As this project is scheduled to lie over until the next annual meeting of the A. M. A. there is ample time for a thorough consideration of the subject, and although no prophet, nor the son of a prophet, we venture the prophecy that its consummation will never be accomplished—unless suicide is contemplated, and that the executive committee who are delegated to pass upon the propriety of proposed advertisements, will not be compelled to shorten their office hours nor curtail their outside work in order to perform their duties.

Medicinal preparations of a proprietary nature possess a distinctive character as marked as that of individuals, due to the process of manufacture and fixed composition. Many of the better known preparations would not suffer by the publication of their exact formulae, as, for example, when certain complicated laboratory machinery is required for their perfect manufacture, but this is not true of many well known preparations whose nature is that of a simple compound.

It is, however, also true that if the exact formulae of certain proprietary remedies

were known and taken to number of skilled pharmacists for compounding the results would differ in nearly every instance.

A common example is the preparation Essence of Pepsin. Every druggist can make it, and practically all do make it, all perhaps using the standard formula, yet write ten prescriptions and compare the results! Compound Syrup of Hypophosphites is another example; this preparation can be found on the shelf of every drug store in the country, yet in appearance, taste and action all differ, and in many instances materially.

It is not to be supposed that a preparation can always be duplicated providing the formula is known, but such a procedure would encourage substitution to an alarming extent, and in this fact lies the greatest danger. While substitution is probably not practiced as generally as some writers would lead one to believe, especially by the retail druggist on individual prescriptions, there is another form of substitution which, while in a sense is not deceptive nor fraudulent, is nevertheless an imposition upon the original manufacturer and a source of positive financial loss to him.

This form of substitution is found in the drug stores presumed to be of the higher grade, the store located on the principal street and the most prominent corner. The proprietor has a certain percentage more brains than this uptown or downtown competitor; he has the ability to develop his one time drug store into a department store with a drug department; he is patronized by the elite, and the high-priced doctors send their prescriptions to him for compounding.

Does this druggist substitute? Not much! He has sufficient intelligence to see beyond the extra dime or quarter profit he might make by using a cheap substitute for a high-priced proprietary; he argues that he charges good prices for his prescriptions and can afford to buy all the high priced chemicals and compounds that the doctor may write for, but his keenly developed mental equipment soon reaches the conclusion that there is a shorter road to wealth than by the prescription, via proprietary remedy route.

By the aid of his knowledge of chemistry and pharmacy, and a few timely hints by the editor of his drug journal, he soon perfects an elegant imitation of a certain proprietary, which, strange to relate, often possesses more virtue and curative power than the original. (?)

He now calls upon Dr. So and So and the others who have favored him with their business, thereby conceding evidence of their confidence in him and mutely acknowledging their belief in his superior ability, and in a few well-chosen words convinces

ANTIPHLOGISTINE

Is Now the **STANDARD** Remedial Agent

FOR PNEUMONIA, PLEURISY OR BRONCHITIS, PRIMARY OR SECONDARY TO
LA GRIFFE OR ANY OTHER DISEASE,

BECAUSE

- 1.—Antiphlogistine is far more efficient than a poultice or any other external application.
- 2.—Antiphlogistine draws the blood to the surface—bleeds but saves the blood.
- 3.—Antiphlogistine, by reflex action, contracts the pulmonary vessels, thus depleting the lungs into the dilated superficial capillaries.
- 4.—Antiphlogistine's anodyne effects enable it to allay pain.
- 5.—Antiphlogistine relaxes the muscular and nervous systems thereby tending to induce sleep.
- 6.—Antiphlogistine works persistently and continuously for 24 hours or longer.
- 7.—Antiphlogistine is neat and clean.
- 8.—Antiphlogistine is easily applied and stays exactly where it is put.
- 9.—Antiphlogistine comes off nicely at the proper time, leaving the parts comparatively clean.
- 10.—Antiphlogistine can do no harm and is certain to do good.

It is Only a Question of Properly Applying.

Directions for Applying In Pneumonia.—Prepare the patient in a warm room Lay him on his side and spread Antiphlogistine thick and as hot as can be comfortably borne over one-half the thoracic walls. Cover with a good, warm, cotton-lined cheese-cloth jacket. Roll the patient over on the dressed side and complete the application. Then stitch the front of the jacket. Prepare everything beforehand and work as rapidly as possible. The dressing should be renewed when it can be easily peeled off, generally in about 24 hours.

To insure economy and the best results always order an original package and specify the size required—Small, Medium, Large or Hospital Size.

THE DENVER CHEMICAL MFG. CO.
NEW YORK.

the doctor that it is foolish to pay one dollar an ounce, or one dollar a pint for a remedy that can be duplicated for less than half the amount, as he supposes. The doctor's attention is called to the fact that he, as an intelligent and educated physician, can, of course, readily see that nothing is gained by adhering to the old and genuine preparation and the result is, he prescribes the druggists' imitation product more or less afterward. By continual efforts in this direction, worthy of a nobler purpose, doctors are constantly imposed upon through a want of a proper knowledge of the facts, but who believe the statements repeatedly made by the interested parties.

That harm frequently results from lack of precaution on the part of the physician there can be no doubt, yet, the remedies prescribed are not always absolutely indicated and in many cases the expected results are not obtained, even when genuine remedies are dispensed, but when this is the case under the best possible conditions, what can one expect from the use of imitations that are known and prescribed as such?

Apart from therapeutic views, it is unfair, venal, dishonest. Persons who further their own interests by appropriating the discoveries of others and who confiscate the products of the brains of their superiors, are conducting their business along lines which the self-respecting and conscientious physician cannot follow with profit to himself, nor advantage to his patient.

Anything done that will make substitution easy, or which will enable the skilled but dishonest pharmacist to become a party to the deception of physicians, cannot but be looked upon as a step decidedly unwise, and in direct opposition to true progress and meritorious advancement.

The outcome of the plans proposed by the A. of S. M. J. will be watched with interest.—Albright's Office Practitioner.

Medicine Made Easy.

It is really astonishing how easy the practice of medicine has been made, of recent years, by the ever-ready, ever-watchful, ever-helpful manufacturer of ready-to-take medicine! Suppose a patient comes to you with a bad burn. You do not need to devote any particular time to studying the case, nor to ascertaining the special character of the burn. Just turn to your medical journals and glance through the advertising pages. You find: "Fire burns, sun burns, burns by gasoline, cuts and sores, wounds galore are healed by Unguentine." What more do you want? Just slap on "unguentine" (whatever it may be; you do not know, but that does not matter; the kindly disposed manufacturer tells you to) in lib-

eral quantities, collect your fee (this is necessary for the "unguentine" must be paid for) and let the patient go. Suppose the patient has chronic constipation. Again turn over the pages of your journals (of course we mean the advertising pages)—or if you do not feel that you can afford a liberal education by taking several journals, take one, and study the advertising pages of the *Journal of the American Medical Association*. Here you find exactly what the patient wants: "Lapactic pills, the 20th century conqueror of chronic constipation." Do not be so foolishly impertinent as to ask or to want to know what the patient will be taking if you give him "lapactic pills;" just do what you are told. Perhaps his constipation may come from some cause that needs your prompt and skillful attention in other ways; but take the chance and practice "medicine made easy, or the doctor's friend." Carefully preserve the advertising pages of the journal for a year and you will have a ready-reference library that will instruct you at once and authoritatively as to exactly what to give in any case. The patient will probably take a good deal of the same stuff under different names and without your knowing it, but that does not matter; each kind is the best.—California State Journal of Medicine.

Umbilical Hernia at Birth.

Fournier, in the British Medical Journal, states that he operated upon an infant with umbilical hernia on the day of its birth, and without anesthetics. The incision was made along the median line; three loops of small intestine were found in the sac, one bearing a Meckel's diverticulum, and all adhered to each other and to the walls of the sac. The adhesions were separated with the finger. Dr. Fournier passed the nail of his forefinger under the lower border of the neck of the sack, which he divided with a bistoury, and then was able to reduce the herniated intestine. The parietes were closed with catgut sutures. Cure was complete by the ninth day. He considers that a congenital hernia requires immediate operation on the day of birth, and that anesthesia is unnecessary.

The usefulness of good Hypophosphites in pulmonary and strumous affections is generally agreed upon by the profession.

We commend to the notice of our readers the advertisement on page xii, of this number. "Robinson's Hypophosphites" (this is a new combination and will be found very valuable) is an elegant and uniformly active preparation: the presence of Quinine, Strychnine, Iron, etc., adding highly to their tonic value.

